

Exhibit A

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Formed in the Commonwealth of Pennsylvania

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The Trustees of Princeton University

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY

THE TRUSTEES OF PRINCETON
UNIVERSITY,

Civil Action No. _____

Plaintiff,

V.

TOD WILLIAMS BILLIE TSIEN
ARCHITECTS, LLP; JACOBS
ARCHITECTS/ENGINEERS, INC.; and
JACOBS CONSULTANCY INC.,

***COMPLAINT &
DEMAND FOR JURY TRIAL***

(Document Electronically Filed)

Defendants.

Plaintiff, The Trustees of Princeton University (“**Princeton**” or “**Plaintiff**”), a private, non-profit educational institution, brings this Complaint against Defendants Tod Williams Billie Tsien Architects, LLP (“**TWBTA**”), Jacobs Architects/Engineers, Inc., and Jacobs Consultancy Inc. (collectively, “**Jacobs**” or the “**Jacobs Entities**”) (the three defendants are referred to collectively herein as “**Defendants**”), and states and alleges as follows:

NATURE OF THE CASE

1. Defendants are design professionals engaged by, or on behalf of, Princeton to provide professional design services related to the design and construction of The Andlinger Center for Energy and the Environment (“**Andlinger**” or the “**Project**”). Princeton engaged TWBTA to serve as the project architect, and TWBTA, in turn, engaged Jacobs as engineering sub-consultants for the design of the Project as well as other sub-consultants who are not named herein.

2. Defendants TWBTA and Jacobs (collectively, the “**Design Team**”) failed to perform their professional design responsibilities in accordance with the prevailing standard of care, resulting in unnecessary and excessive additional costs and extensive project delays. Further, the Design Team failed to meet the Schedule Milestones set forth in the prime design contract and failed to design to budget as contractually required and, therefore, breached their contracts. By this action, Princeton seeks to recover the damages it has incurred as a result of Defendants’ professional negligence and breach of contract.

THE PARTIES

3. Princeton is a non-profit educational institution, existing under the laws of the State of New Jersey, with its principal place of business located at One Nassau Hall, Princeton University, Princeton, New Jersey 08544.

4. Upon information and belief, TWBTA is a limited liability partnership organized under the laws of the State of New York, with its principal place of business located at 222 Central Park South, New York, New York 10019. TWBTA provided architectural services related to the Project.

5. Upon information and belief, Jacobs Architects/Engineers, Inc. (“**Jacobs Architects/Engineers**”) is a corporation organized under the laws of the State of Delaware, with its principal place of business located at 777 Main Street, Fort Worth, Texas 76102. Jacobs Architects/Engineers was a sub-consultant of TWBTA that provided engineering services related to the Project, specifically with respect to scientific laboratory spaces.

6. Upon information and belief, Jacobs Consultancy Inc. (“**Jacobs Consultancy**”) is a corporation organized under the laws of the State of Texas, with its principal place of business located at 5995 Rogerdale Road, Houston, Texas 77072 and an office located at 100 Walnut Avenue, Suite 604, Clark, NJ 07066. Jacobs Consultancy was a sub-consultant of TWBTA that provided engineering services related to the Project, specifically with respect to scientific laboratory spaces.

JURISDICTION AND VENUE

7. This Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §1332, as there is complete diversity between the parties and the amount in controversy exceeds \$75,000.00, exclusive of interest and costs.

8. The Court has personal jurisdiction over TWBTA because TWBTA has contractually consented to such jurisdiction. Article XVII (c) of the agreement to perform architectural design services for the Project entered into between Princeton and TWBTA, dated February 12, 2009 (the “**Design Contract**”) provides for the exclusive jurisdiction in the State or Federal courts of New Jersey for actions arising under the Design Contract. Further, this Court has personal jurisdiction over TWBTA because it conducted business in the state and Plaintiff’s cause of action relates to and arises out of the business that it conducted in the state, and it has

availed itself of New Jersey laws by negotiating the Design Contract and performing the design services required as Project architect for the Project.

9. The Court has personal jurisdiction over Jacobs Architects/Engineers because it has consented to jurisdiction pursuant to Section 8.2 of its agreement with TWBTA, whereby Jacobs Architects/Engineers agreed to participate in whatever dispute resolution process for this matter to which TWBTA is a party or participant. In addition, the Court has personal jurisdiction over Jacobs Architects/Engineers because it conducted business in the state and Plaintiff's cause of action relates to and arises out of the business that it conducted in the state, and it has availed itself of New Jersey laws by performing engineering services required for the Project.

10. The Court has personal jurisdiction over Jacobs Consultancy because it has consented to jurisdiction pursuant to Section 8.2 of its agreement with TWBTA, whereby Jacobs Consultancy agreed to participate in whatever dispute resolution process for this matter to which TWBTA is a party or participant. In addition, the Court has personal jurisdiction over Jacobs Consultancy because it conducted business in the state and Plaintiff's cause of action relates to and arises out of the business that it conducted in the state, and it has availed itself of New Jersey laws by performing engineering services required for the Project.

11. Venue is proper in the District of New Jersey pursuant to 28 U.S.C. §1391(b)(2).

ALLEGATIONS COMMON TO ALL COUNTS

12. In 2008, Princeton issued an RFP for the design and construction of the Andlinger Center for Energy and the Environment, a state-of-the-art, 129,000 square foot facility for research and teaching in the areas of sustainable energy-technology development, energy efficiency, and environmental protection and remediation. Andlinger would bring together faculty members from various departments and interdisciplinary centers, including Chemical

Engineering, Electrical Engineering, Civil and Environmental Engineering, Mechanical and Aerospace Engineering, and the Princeton Institute for Science and Technology of Materials, among others, in a world-class facility devoted to research and teaching in the areas of energy and the environment.

13. On or about February 12, 2009, Princeton engaged TWBTA to perform architectural design services for the Project pursuant to the Design Contract. A copy of the contract between Princeton and TWBTA for Design Services for the Andlinger Center for Energy & Environment, Contract No. FC0003914W, dated February 12, 2009, is attached hereto as **Exhibit A**.

14. In order to perform and complete the design services necessary for the Project, TWBTA engaged Jacobs Architects/Engineers and Jacobs Consultancy as well as other sub-consultants.

15. On or about July 11, 2011, Princeton engaged F.J. Sciame Construction, Inc. (“**Construction Manager**”), to act as construction manager to construct the Project.

16. Project design commenced in 2009. Construction commenced in 2012 and was substantially completed on January 1, 2016.

The Design Contract

17. The Design Contract sets forth the terms of the agreement between Princeton and TWBTA, including setting forth the standard of care.

18. Article VI(a) of the Design Contract, which established the Standard of Care, provides that:

Standard of Care. Architect-Engineer shall perform the Services hereunder this Agreement in accordance with the standards of skill and care generally exercised by other design professionals in the same locale acting under similar circumstances and conditions.

19. Article VI(b) (**Project Administration Services**) of the Design Contract, which sets forth TWBTA's administration obligations, provides that:

Project Administration Services. The Architect-Engineer shall provide all project administration services necessary to facilitate the orderly progress of the Project, including attending Project meetings, communicating with others as appropriate, monitoring progress and issuing progress reports to Princeton University, supervising Architect-Engineer's in-house personnel, directing Architect-Engineer's Consultants and coordinating and managing information flow and decision-making. (Emphasis supplied).

20. Article VI(d) (**Project Cost Control**) of the Design Contract provides that:

(1) **Duty to Design the Project Within the Construction Budget.** Architect-Engineer shall design the Project so that the Construction Cost to construct the Project in accordance with the Construction Documents prepared by the Architect-Engineer and its Consultants does not exceed the Construction Budget. The Architect-Engineer acknowledges that the Construction Budget includes adequate provision for the construction of all elements of the Project designed by or specified by the Architect-Engineer and its Consultants as contemplated by the Project Description attached as Part II of the Contract.

21. Article VI(f) (**Coordinated Services**) of the Design Contract, which sets forth

TWBTA's obligations to coordinate its services and those of its sub-consultants, provides that:

Coordinated Services. The Architect-Engineer acknowledges that it is essential that all Services in connection with the Project be coordinated, including services provided by Princeton University. The Architect-Engineer shall coordinate the services of all its architects, engineers, Basic Consultants and Specialized Consultants for the Project, shall review and check all drawings and specifications prepared by architects, engineers, Basic Consultants and Specialized Consultants for the Project, and shall make modifications as necessary, to assure that they are integrated into a coordinated and complete set of documents prior to each submission. In addition, the Architect-Engineer shall coordinate its Services with services provided by Princeton University and Princeton University's in-house architects.

22. Article VII(f) (**Construction Documents Phase Services**) of the Design Contract

provides, at Article VII(f)(3), that:

Drawings. Drawings shall document the scope of work and details for the project, and shall be coordinated both internally, with the Consultants, and with the specifications. Construction Documents shall, in accordance with the Standard of Care set forth in Article VI(a), be in compliance with those codes, ordinances, statutes, regulations and laws applicable to the Architect-Engineer's Services, except to the extent expressly and specifically stated in detail in writing by Architect-Engineer at the time of such submission.

23. Article VII(h) (**Construction Phase Services – Administration of the Construction Contract**) of the Design Contract, which sets forth the requirements for TWBTA's services during the Construction Phase, provides, among other things, that TWBTA shall:

- (i) administer the contract between Princeton and the Contractor in accordance with the Construction Documents;
- (ii) respond to requests for information by way of sketches or other supplemental instructions without causing construction delays and within the time agreed to between Contractor and the Architect-Engineer, but shall not result in construction delays; and
- (iii) revise the Construction Documents due to, among other things, a reasonable number of Princeton's proposed changes to the Construction Documents.

24. Article VII(h)(4)(ii) (**Due to Architect-Engineer's Error**) of the Design Contract also provides, in relevant part, that changes to Construction Documents caused by TWBTA's error, omission or failure to coordinate must be made promptly and at no additional cost to Princeton:

[i]f the Construction Documents must be changed to correct Architect-Engineer's error, omission, or failure to coordinate the drawings and specifications comprising the Construction Documents, Architect-Engineer will make the change promptly upon becoming aware of the need for a correction, as part of its Basic Services, and at no additional cost to Princeton University. Architect-Engineer will work with Princeton University and the Contractor to minimize the impact of the resulting changes on the cost of the Project and the Construction Schedule.

25. Article VII(h)(10) (**Submittals**) of the Design Contract provides, in relevant part, that TWBTA shall review all submittals, including shop drawings, product data, and samples, within ten (10) days of receipt of first submissions and subsequent submittals of same, and that the shop drawing review process shall not be used by the Architect-Engineer to enhance or modify the design of the project. Article VII(h)(10) provides:

Submittals. The Architect-Engineer shall review and/or approve the Contractor's submittals such as shop drawings, product data and samples. The Architect-Engineer's action shall be taken within ten (10) working days of receipt of first submissions and subsequent submittals, unless a shorter period is agreed to with respect to particular submittals. Review of such submittals is not conducted for the purpose of determining accuracy and completeness of other details such as dimensions and quantities or for substantiating instructions for installation or performance of equipment or systems by the Contractors, all of which remain the responsibility of the Contractor. The Architect-Engineer's review shall not constitute approval of safety precautions or programs, or of construction means, methods, techniques, sequences or procedures. The Architect-Engineer's approval of a specific item shall not indicate approval of an assembly of which the item is a component. When professional certification of performance characteristics of materials, systems or equipment is required by the Construction Documents, the Architect-Engineer shall be entitled to rely upon such certification to establish that the material, systems or equipment will meet the performance criteria required by the Construction Documents. The shop drawing review process shall not be used by the Architect-Engineer to enhance or modify the design of the project.

26. Article VII(d), (e), (f), (g), and (h) of the Design Contract further required TWBTA to provide its services in accordance with customary milestones broken down between the design phase, bidding and negotiation phase, and construction phase as follows:

- (i) During the Schematic Design Phase, TWBTA would submit Schematic Design Documents that included, among other things, preliminary architectural, mechanical, electrical, civil, and landscape designs within the prescribed Construction Budget of \$102,290,000.00 for Princeton's review and approval;
- (ii) During the Design Development Phase, TWBTA would submit Design Development Documents that included, among other things, architectural, mechanical, electrical, civil, and landscape designs that

established the final scope of each discipline for Princeton's review and approval;

(iii) During the Construction Documents Phase, TWBTA would submit Construction Documents that included, among other things, fully coordinated drawings documenting the scope and detail for the Project;

(iv) During the Bidding and Negotiation Phase TWBTA would, among other things, assist Princeton in evaluating and awarding bids to contractors to construct the Project; and

(v) During the Construction Phase, TWBTA would, among other things, review contractor submittals including shop drawings, respond to questions from the contractor concerning the design, prepare further sketches and direction to the contractor, attend project meetings, review the contractor's applications for payment, and regularly visit the site and review the progress and quality of construction, and report back to Princeton.

27. Article VI(e)(3) (**Consultant Agreements**) of the Design Contract requires TWBTA to include a provision in its subcontracts with consultants, like the Jacobs Entities, expressly designating Princeton as a third-party beneficiary of those subcontracts, stating, in relevant part:

Consultant Agreements. Architect-Engineer, shall upon request, provide to Princeton University complete and correct copies of Architect-Engineer's agreement with each Consultant, including amendments thereto. Architect-Engineer shall enter into an agreement with each Consultant pursuant to which the Consultant assumes toward the Architect-Engineer all of the obligations that the Architect-Engineer assumes toward Princeton University under the Contract. In addition, each contract shall include the following provisions:

(i) An agreement by the Architect-Engineer and Consultant that Princeton University is a third-party beneficiary of the agreement, entitled to enforce any rights thereunder for its benefit, and that Princeton University shall have the same rights and remedies vis-à-vis such Consultants that the Architect-Engineer may have, including, but not limited to, the right to be compensated for any loss, expense or damage of any nature whatsoever incurred by Princeton University, resulting from any breach of such agreements by the Consultant, any breach of representations arising out of such agreements and any negligent

error or omission of such Consultant in the performance of any of its professional services obligations under such agreements;

28. The Design Contract, at Article XI (**Time of Performance**), also required that TWBTA perform its Services in accordance with the Milestone Design Schedule:

29. Time is of the essence for this Contract. The Architect-Engineer shall perform its services under the Contract in accordance with the Milestone Design Schedule set forth below and the Design and Construction Schedule as described in Article VI(c).

Project Phase	Milestone Dates
Schematic Design Phase	December 25, 2009
SD Drawings Complete	October 23, 2009
SD Complete/Approval to Proceed to DD	January 22, 2010
Design Development Phase	October 13, 2010
Construction Documents Phase	September 14, 2011
50% Documents Complete	February 4, 2011
85% Documents Complete	June 17, 2011
100% Documents Complete	September 14, 2011
GMP Agreement	October 7, 2011
Bidding & Negotiation Phase	November 4, 2011
Construction Phase	February 27, 2015
Close-Out Phase	March 2, 2016

30. Finally, the Design Contract calls for TWBTA to indemnify Princeton for TWBTA's negligent acts. Article XII(h)(1) (**Indemnification**) of the Design Contract states, in relevant part:

To the fullest extent permitted by the laws of the State of New Jersey . . . the Architect-Engineer (the “Indemnitor” for purposes of interpreting this Paragraph) agrees to indemnify and hold harmless, and pay for the defense of Princeton University, its trustees, officers and employees, and any affiliated or related entities . . . against all claims, loss, liability, damage, costs and expenses, including reasonable attorney’s fees, that are alleged to have occurred in whole or in part arise as a result of, but only to the extent caused by and in proportion to, the negligent acts or omissions of the Indemnitor, its agents, consultants, employees, or representatives. (Emphasis omitted).

The Design Team’s Unsatisfactory Performance

31. From the outset, TWBTA failed to properly and efficiently coordinate its work with that of its sub-consultants and to manage the work of its sub-consultants.

32. TWBTA’s failure to coordinate its subconsultants and failure to properly manage the design process in a timely manner delayed the completion of the design, and the administration of the construction. TWBTA’s failures plagued the Project, causing Princeton to incur additional costs and suffer project delays.

33. Further, over the course of the design process, the Design Team repeatedly submitted designs that exceeded the construction budget for the Project. In fact, the initial design submission exceeded the design to budget by over fifty percent (50%). The Design Development submission and 50% and 85% construction documents were also over budget.

34. Submission of grossly over-budget designs required additional rework and extensive value engineering at each design milestone including Schematic Design, Design Development, 50% Construction Documents and 85% Construction Documents to achieve a construction budget that was acceptable to Princeton.

35. Over the course of the Construction Document Phase, drawings, specifications, and other work product prepared by the Design Team were routinely incomplete and deficient.

TWBTA Failed to Submit Complete Documents

In Accordance with Contract Milestones

36. Over the course of the Construction Document Phase, TWBTA's drawings, specifications, and other work product were routinely incomplete, deficient and late.

37. TWBTA failed to meet the following key Contract Milestones:

% Complete	Contract Milestone
Schematic Design Phase	December 25, 2009
SD Drawings Complete	October 23, 2009
SD Complete/Approved to Proceed to DD	January 22, 2010
Design Development Phase	October 13, 2010
85% Documents Complete	June 17, 2011
100% Documents Complete	September 14, 2011
GMP Agreement	October 7, 2011

38. Instead, TWBTA issued their Construction Documents as follows:

% Complete	Contract Milestone	Date of Submission
Design Documents Complete	-	-
85% Documents Complete	June 17, 2011	August 12, 2011
100% Documents Complete – First Release	September 14, 2011	January 13, 2012
100% Documents Complete – Second Release	September 14, 2011	June 15, 2012
GMP Agreement	October 7, 2011	March 12, 2012

39. As set forth above, on August 12, 2011, the Design Team submitted drawings and specifications to Princeton that the Design Team claimed to be 85% complete (and upon which the Construction Manager's guaranteed maximum price ("GMP") was to be based). The Design

Team's missing details and coordination resulted in the issuance by TWBTA of eleven (11) Bid Addenda and four (4) Construction Addenda before the end of 2011. As a result, Princeton was forced to require the Construction Manager to delay the buyout of certain key trade subcontractors to provide more time for the Design Team to complete its work.

40. After the submission on August 12, 2011, TWBTA issued the following bid addenda:

- a. Bid Addenda 1–3 9/27/11
- b. Bid Addenda 5–8 9/30/11
- c. Bid Addenda 4 10/6/11
- d. Bid Addenda 9 10/31/11
- e. Bid Addenda 10 11/7/11
- f. Bid Addenda 11 12/2/11

41. Prior to construction TWBTA issued the following construction addenda:

- a. Construction Addendum 1 9/26/11
- b. Construction Addendum 2 9/27/11
- c. Construction Addendum 3 10/12/11
- d. Construction Addendum 4 9/26/11

42. Like the 85% set, the 100% Construction Documents package that TWBTA issued on January 13, 2012 **were not complete**. The drawings were missing details and coordination. Thus, after this package was issued, TWBTA issued more construction addenda:

- a. Construction Addendum 6 & 7 2/14/12
- b. Construction Addendum 8 2/17/12
- c. Construction Addendum 12 & 13 3/01/12

43. Princeton could not finalize the GMP with the Construction Manager until March 12, 2012 – five months after the scheduled milestone. Construction commenced on or about February 27, 2012.

44. The 100% Construction Documents were still not complete. TWBTA issued the following construction addenda after the GMP was executed:

- a. Construction Addendum 9 3/14/12
- b. Construction Addendum 14 3/23/12
- c. Construction Addendum 10 4/20/12
- d. Construction Addendum 5 5/01/12
- e. Construction Addendum 11 5/03/12
- f. Construction Addendum 16 5/22/12
- g. Construction Addendum 15 6/01/12

45. Princeton's numerous admonitions to TWBTA to complete the drawings properly were not heeded. TWBTA issued a final consolidated drawing set that included these addenda on June 15, 2012 (the “**Consolidated Set**”), which was also labeled as the 100% Construction Documents. The Design Team issued one last construction addendum four months after the Consolidated Set was issued – Construction Addendum 8 – on October 10, 2012.

46. Yet, the revised set of 100% Construction Documents was still incomplete -- resulting in significant rework and redesign by the Design Team on an on-going basis during the Construction Phase of the Project.

47. Contrary to the express provisions of the Design Contract, TWBTA and the Design Team often used trade subcontractor shop drawings, in particular, mechanical trades' shop drawings, as an opportunity to revise the design and finish incomplete or incorrect designs contained in the construction drawings.

**The Design Team Issued 87 ASIs That Required Revisions
to More Than a Thousand Drawings**

48. The failure of TWBTA and the Jacobs Entities to properly, timely, and fully complete the project design resulted in the Design Team's issuance of scores of Architect's Supplemental Information notices (each an "ASI") to the Construction Manager. In fact, the Design Team used ASIs and Addendum - over the one-year time period subsequent to the submission of 85% Construction Documents - to complete the design work, including coordination among the subconsultant disciplines.

49. After the so-called 100% Construction Documents were issued, TWBTA issued approximately eighty-seven (87) ASIs from June 15, 2012 until June 21, 2017. These ASIs fundamentally revised and modified the 100% set of Construction Documents, and contained revisions that captured missing or incorrect details and missing design coordination required for the construction of the Project. Moreover, seven (7) of the ASIs were revised and resubmitted with even more design revisions.

**TWBTA's Incomplete and Deficient Work
Resulted in No Less than 462 Change Orders**

50. The impact of the cascade of ASIs and other design changes was extensive. The ASIs and the Design Team's other incomplete or deficient work resulted in the issuance of no less than four hundred and sixty-two (462) out of the Project's six hundred and fifty-four (654) Change Order Requests ("CORs") to the Construction Manager.

51. Of the four hundred and sixty-two (462) design related CORs, four hundred and thirty-eight (438) CORs are related to TWBTA's and/or Jacobs' errors and omissions; seventeen (17) CORs are related to additional Building Information Modeling ("BIM") services as a result of design revisions; and seven (7) CORs are related to delays that the Design Team caused.

52. Thus, Princeton has been damaged in an amount no less than \$3,400,000 (the “**Errors and Omissions Costs**”) resulting from the four hundred and thirty-eight (438) CORs related to the Design Team’s errors and omissions. The Design Team is responsible for these Errors and Omissions Costs, which would not have been incurred had the Design Team delivered a set of fully detailed and complete coordinated drawings from the outset of the Project.

Additional BIM Services & Costs

53. The Design Contract required that TWBTA deliver a full model of the Project using Building Information Modeling (“**BIM**”). The Design Contract specifically provides, in relevant part, in Part II, Project Description (at page 4 - 5):

Building Information Modeling

The selected Architect will implement a design and documentation process that is fully coordinated with all consultants. It is highly desired that the Architect will utilize three-dimensional, real-time, dynamic building modeling software to increase productivity in building design and construction. The process is to produce a Building Information Model (BIM), which encompasses building geometry, spatial relationships, geographic information, and quantities and properties of the building components. It is anticipated that the Architect will work with Princeton University at the earliest inception of the project to establish an acceptable BIM standard for the project.

54. The original BIM coordination that the Construction Manager and its subcontractors carried out required extensive revisions by the Construction Manager and mechanical subcontractors because of the incomplete drawings and volume of revisions received from the Design Team.

55. The ASIs that TWBTA issued after issuance of the Consolidated Set resulted in seven (7) change order requests to Princeton by the Construction Manager for revisions required to the BIM Construction Model. These changes order were as follows:

(i)	CO 44	MMC Contractors	\$ 4,521
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(ii)	CO 171A R1	Barham Group	\$ 523,224
(iii)	CO 171B R1	MMC Contractors	\$ 263,639
(iv)	CO 171C A	Unity International Group	\$ 212,077
(v)	CO 171C BR1	Unity International Group	\$ 196,203
(vi)	CO 233B	Sciame	\$ 156,606
(vii)	CO 249 R1	Majek	\$ 7,681
	Total:		\$1,363,951

56. Thus, the ASIs, which fundamentally changed elements of the design over an extended period of time, resulted in design errors and omissions and required the Construction Manager and its subcontractors to extensively and repeatedly rework previously completed portions of the BIM model. As a result, Princeton was required to pay the Construction Manager an additional \$1,363,951 for additional BIM services, which were evidenced by seven (7) CORs (the “**Additional BIM Costs**”).

57. These additional BIM services would not have been necessary if the Design Team delivered a complete set of coordinated drawings from the outset of the Project. Thus, the Design Team is responsible for the Additional BIM Costs.

The Design Team Delayed the Project by No Less than Five Months

58. TWBTA’s failure to provide complete and coordinated documents to the construction manager on June 15, 2012, TWBTA’s failure to coordinate the work of the Design Team and the excessive number of Design Team related changes and ASIs resulted in excessive costs and delays to the construction of the Project.

59. One extreme example of the delays caused by the design team includes ASI 36, which impacted the execution of the project as follows: On or about December 3, 2013, TWBTA issued ASI 36, which proposed modifications to the clean room space of the Project—a highly

specialized laboratory space equipped with a state-of-the-art air filtration system that filters airborne dust 1,000-fold for specialized nanotechnology research, such as the creation of plastic-based solar cells and superconducting materials.

60. Jacobs, the specialty laboratory sub-consultants, had previously selected and incorporated galvanized steel for the clean room exhaust duct material in the drawings issued for construction. However, on or about October 11, 2013, while construction was ongoing, Jacobs wrote to Princeton recommending a change to the duct material from galvanized steel to PTFE-lined stainless steel ductwork.

61. On Jacobs' recommendation, TWBTA prepared and issued ASI 36 in December 2013, which provided for the change in material from galvanized to PTFE-lined stainless steel. Nevertheless, throughout January 2014, Princeton and Construction Manager urged Jacobs to further evaluate and consider whether the change to PTFE-lined ductwork was necessary.

62. As a result of indecision by TWBTA and the Design Team concerning the duct material, Princeton engaged an independent laboratory consultant (the "**Independent Consultant**") to review the proposed PTFE-lined duct material. The Independent Consultant ultimately recommended a change from the original galvanized steel ductwork to stainless steel ductwork, but rejected the PTFE-lined duct that the Design Team proposed.

63. ASI 36, Revision 1, which TWBTA issued on or about February 1, 2014, memorialized the ultimate change from galvanized steel to stainless steel. Later, on or about March 21, 2014, ASI 36, Revision 2 changed the stainless steel ductwork from welded to bolted connections.

64. The Design Team's months-long delay in finalizing the duct material change in ASI 36 was further compounded by more incomplete drawings that were missing, among other things, final tool connections and exhaust duct drops in the clean room, exacerbating the delays.

65. As a result of the Design Team's final ductwork changes in ASI 36 and incomplete drawings, the Construction Manager and subcontractors' coordination of the BIM model and issuance of the shop drawings was delayed.

66. Thereafter, after months of additional shop drawing review and revisions by the Design Team, the final shop drawings related to the ductwork were completed, approved, and released for fabrication in August 2014. This process of BIM coordination, shop drawings and fabrication delayed the installation of exhaust ductwork in the cleanroom by at least 3.5 months.

Delays

67. The Project was substantially completed on January 1, 2016, approximately ten months behind schedule. Total delays attributable to Design Team are no less than five (5) months.

68. As a result of the Design Team-caused delays, including but not limited to ASI 36, Princeton incurred more than \$6,000,000 in damages (the "**Delay Damages**").

COUNT ONE

(Breach of Contract Against TWBTA)

69. Princeton incorporates by reference the allegations set forth in the preceding paragraphs of the Complaint as though set forth at length herein.

70. TWBTA materially breached the Design Contract by failing to perform its services in accordance with the terms of the Design Contract. Specifically, TWBTA materially breached the Design Contract by, among other things:

- a. failing to adequately prepare plans and specifications for the construction of the Project so as to prevent the numerous errors, omissions, delays, and other defects that developed on the Project;
- b. failing to adequately manage, supervise, and oversee the design services, including the preparation of the plans and specifications by its consultants, including but not limited to, Jacobs, so as to prevent the numerous errors, omissions, delays, and other defects that developed on the Project; and
- c. in other respects to be proved at trial.

71. Princeton has fulfilled all of its contractual obligations and any and all conditions precedent to asserting these claims against TWBTA.

72. As a direct and proximate result of TWBTA's defective performance and breach of the Design Contract, Princeton has incurred significant expense related to the numerous errors, omissions, delays, and other defects that developed on the Project, including but not limited to the Errors and Omissions Costs, Additional BIM Costs, and Delay Damages, as well as other direct damages in an aggregate amount of not less than \$10,700,000.

WHEREFORE, Princeton demands judgment against TWBTA on this Count for compensatory and monetary damages as set forth above, attorneys' fees and costs, pre-judgment and post-judgment interest at the highest rate permitted by applicable New Jersey law, and such other and further relief as the Court deems just and proper.

COUNT TWO

(Negligence Against TWBTA)

73. Princeton incorporates by reference the allegations set forth in the preceding paragraphs of the Complaint as though set forth at length herein.

74. In performing consultative services related to the Project, TWBTA provided architectural advice upon which Princeton reasonably relied, and over which Princeton exercised no direct control.

75. In performing its consultative services for the Project, TWBTA owed Princeton a reasonable duty of care to perform its architectural services in accordance with the reasonable standard of care expected of similarly situated professionals performing such work on comparable projects.

76. TWBTA materially breached its duty of care to Princeton by, among other things:

- (a) failing to adequately prepare plans and specifications for the construction of the Project so as to prevent the numerous errors, omissions, delays, and other defects developed on the Project;
- (b) failing to adequately manage, supervise, and oversee the services, including the preparation of the plans and specifications by its consultants, including but not limited to, Jacobs, so as to prevent the numerous errors, omissions, delays, and other defects that developed on the Project; and
- (c) in other respects to be proved at trial.

77. As a direct and proximate result of TWBTA's material breach of duty to Princeton, Princeton has incurred significant expense related to the numerous errors, omissions, delays, and other defects that developed on the Project, including but not limited to the Errors and Omissions Costs, Additional BIM Costs, and Delay Damages, as well as other direct damages, in an aggregate amount of not less than \$10,700,000.

WHEREFORE, Princeton demands judgment against TWBTA on this Count for compensatory and monetary damages as set forth above, attorneys' fees and costs, pre-judgment and post-judgment interest at the highest rate permitted by applicable New Jersey law, and such other and further relief as the Court deems just and proper.

COUNT THREE
(Declaratory Judgment – Indemnification Against TWBTA)

78. Princeton incorporates by reference the allegations set forth in the preceding paragraphs of the Complaint as though set forth at length herein.

79. Princeton is entitled to a declaration under N.J.S.A. 2A:16-50, et seq., of the rights, duties, and responsibilities of the parties under the Design Contract.

80. An actual and justiciable dispute exists between the parties for which Princeton lacks an adequate remedy at law and is entitled to a declaration of rights from the Court.

81. The Design Contract requires TWBTA to indemnify Princeton for all “loss[es], liability, damages, cost and expenses” incurred by Princeton as a result of the negligent acts or omissions of TWBTA and/or the Jacobs Entities.

82. As a result of TWBTA’s negligence, Princeton has incurred damages and costs related to design errors and omissions, including but not limited to the Errors and Omissions Costs, Additional BIM Costs, and Delay Damages.

WHEREFORE, Princeton demands judgment against TWBTA on this Count, declaring that TWBTA must indemnify and hold harmless, and pay for the defense of, Princeton for all claims, loss, liability, damage, costs and expenses, including reasonable attorney’s fees, that are alleged to have occurred in whole or in part arise as a result of, but only to the extent caused by and in proportion to, the negligent acts or omissions of TWBTA and/or the Jacobs Entities.

COUNT FOUR

(Third Party Beneficiary Breach of Contract Against the Jacobs Entities)

83. Princeton incorporates by reference the allegations set forth in the preceding paragraphs of the Complaint as though set forth at length herein.

84. Princeton was an intended and foreseeable beneficiary of the contracts under which TWBTA retained both Jacobs Entities to evaluate technical considerations related to the design and construction of the Project.

85. The Jacobs Entities materially breached their contracts with TWBTA by failing to adequately consult on and evaluate technical considerations related to the design and

construction of the Project and to coordinate their services with those of TWBTA so as to prevent the numerous errors, omissions, delays and other defects that developed on the Project, and in other respects to be proved at trial.

86. Princeton has fulfilled its contractual obligations to TWBTA and/or either of the Jacobs Entities, if any, and all conditions precedent to asserting these claims against TWBTA and the Jacobs Entities with this Court.

87. As a direct and proximate result of the Jacobs Entities' material breach of their contracts with TWBTA, Princeton has been damaged in an amount to be determined at trial in that it has incurred significant expense related to the numerous errors, omissions, delays, and other defects that developed on the Project, including but not limited to the Errors and Omissions Costs, Additional BIM Costs, Delay Damages, as well as other direct damages and consequential losses.

WHEREFORE, Plaintiff demands judgment against the Jacobs Entities on this Count for compensatory and monetary damages as set forth above, attorneys' fees and costs, pre-judgment and post-judgment interest at the highest rate permitted by applicable New Jersey law, and such other and further relief as the Court deems just and proper.

COUNT FIVE
(Negligence Against the Jacobs Entities)

88. Princeton incorporates by reference the allegations set forth in the preceding paragraphs of the Complaint as though set forth at length herein.

89. In performing consultative services related to the Project, the Jacobs Entities provided technical engineering services upon which Princeton reasonably relied, and over which Princeton exercised no direct control.

90. In performing their consultative services for the Project, the Jacobs Entities owed

Princeton a reasonable duty of care to perform their technical engineering and/or architectural work in accordance with the reasonable standard of care expected of similarly situated professionals performing such work on comparable projects.

91. The Jacobs Entities materially breached their duty of care to Princeton by failing to adequately consult on and evaluate technical considerations related to the design and construction of the Project and to coordinate their services with those of TWBTA so as to prevent the numerous errors, omissions, delays, and other defects that developed on the Project, and in other respects to be proved at trial.

92. As a direct and proximate result of the Jacobs Entities' material breach of duty to Princeton, Princeton has been damaged in an amount to be determined at trial in that it has incurred significant expense related to the numerous errors, omissions, delays, and other defects that developed on the Project, including but not limited to the Errors and Omissions Costs, Additional BIM Costs, Delay Damages, as well as other direct damages and consequential losses.

WHEREFORE, Plaintiff demands judgment against the Jacobs Entities on this Count for compensatory and monetary damages as set forth above, attorneys' fees and costs, pre-judgment and post-judgment interest at the highest rate permitted by applicable New Jersey law, and such other and further relief as the Court deems just and proper.

FOX ROTHSCHILD LLP
Attorneys for Plaintiff
The Trustees of Princeton University

Dated: December 10, 2019

By:



Sarah B. Biser, Esq.
Jeffrey M. Pollock, Esq.

JURY DEMAND

Plaintiff hereby demands a trial by jury as to all issues so triable in the present matter.

FOX ROTHSCHILD LLP
Attorneys for Plaintiff
The Trustees of Princeton University



Dated: December 10, 2019

By:

Sarah B. Biser, Esq.
Jeffrey M. Pollock, Esq.

DESIGNATION OF TRIAL COUNSEL

Sarah B. Biser, Esq., is designated as trial counsel on behalf of Plaintiff, The Trustees of Princeton University.

FOX ROTHSCHILD LLP
Attorneys for Plaintiff
The Trustees of Princeton University



Dated: December 10, 2019

By:

Sarah B. Biser, Esq.
Jeffrey M. Pollock, Esq.



PRINCETON UNIVERSITY

Facilities Contract Administration Office
E. A. MacMillan Building Annex
Princeton, New Jersey 08544

ARCHITECT-ENGINEER DESIGN SERVICES CONTRACT

CONTRACT NUMBER FC0003914W

WITH

TOD WILLIAMS BILLIE TSIEN
ARCHITECTS LLP

FOR

DESIGN SERVICES FOR THE ANDLINGER
CENTER FOR ENERGY & ENVIRONMENT

CONTRACT NUMBER FC0003914W

DESIGN SERVICES FOR THE ANDLINGER CENTER FOR ENERGY & ENVIRONMENT

PART I - Agreement

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NOTE: This Contract has been prepared based on the standard language included in Princeton University *Contract Master AE Design Svcs v1.0(3-2009)*. Any revisions to the standard language agreed to by the Parties are highlighted in this document: deleted text is shown with ~~strikeout~~ and added/changed text with underline.

PROJECT/SERVICES	EFFECTIVE DATE OF CONTRACT
Design Services for the Andlinger Center for Energy & Environment	February 12, 2009
THE TRUSTEES OF PRINCETON UNIVERSITY	ARCHITECT-ENGINEER
PRINCETON UNIVERSITY FACILITIES CONTRACT ADMINISTRATION OFFICE E. A. MACMILLAN BUILDING ANNEX PRINCETON, NJ 08544	TOD WILLIAMS BILLIE TSIEN ARCHITECTS LLP 222 CENTRAL PARK SOUTH GROUND FLOOR NEW YORK, NY 10019

This Architect-Engineer Design Services Contract (the "Contract") for Design Services for the Andlinger Center for Energy & Environment (the "Services") is made and entered into by and between The Trustees of Princeton University (hereinafter "Princeton University"), a New Jersey not-for-profit corporation existing under the laws of the State of New Jersey, with its principal offices in Princeton, New Jersey, and Tod Williams Billie Tsien Architects LLP (hereinafter "Architect-Engineer"), organized and existing under the laws of the State of New York and fully licensed and authorized to provide the required services under New Jersey law, with its principal offices located at the address shown above.

WITNESSETH

WHEREAS, Princeton University desires that the Architect-Engineer furnish the Services specified below for the design and development of plans and specifications so that the Project can be constructed ; and

WHEREAS, Princeton University desires that the Architect-Engineer furnish the Services specified below for the design and development of comprehensive plans and specifications for the Project so that the Project can be constructed at a cost of construction not to exceed the Construction Budget, and the completed Project will comply with all applicable design criteria, laws, codes, regulations, and ordinances; and

WHEREAS, the Architect-Engineer represents that it is willing and able to provide the Services specified herein and that it has the necessary skills and abilities to design the Project in accordance with the terms and conditions set forth herein; and

NOW THEREFORE, the parties do mutually agree as follows:

ARTICLE I - THE "CONTRACT"

The Contract is comprised of the following documents, including all modifications thereof:

Part I -- Agreement

Part II – Project Description including the following documents:

- Project Description for Architect-Engineer Design Services for the Andlinger Center for Energy and the Environment (ACEE) Project dated 10/20/2008 (Attached)
- Tod Williams Billie Tsien Architects Proposal dated November 17, 2008 submitted in response to RFP CAO-09-034W (Incorporated by Reference)

The documents shall be complementary and are intended to include and imply all items required for the proper execution and completion of the Services (as defined in Article II). However, to the extent the terms of the documents may conflict, the documents shall control in the order listed above.

All prior negotiations and writings of every kind concerning the Services described herein are superseded and supplanted by this Contract. Specifically, Letter Contract FC0003914W entered into with Tod Williams Billie Tsien Architects is encompassed into and superseded by this Contract and costs associated with services performed under the Letter Contract are included as a part of the compensation established by this Contract in Article IX.

ARTICLE II – DEFINITIONS

The following definitions are applicable to this Contract:

- (a) The term "**Architect-Engineer**" aggregate refers to all of the Architects and Engineers in the employ of the Architect-Engineer, as well as Basic Consultants and Specialized Consultants separately engaged by the Architect-Engineer in the performance of this Contract.
- (b) The term "**Additional Services**" means those services as further described in Article VIII, which may be performed by the Architect-Engineer as part of the Contract only if and to the extent specifically authorized by Princeton University in writing.
- (c) The term "**Archive Drawings and Specifications**" means the record drawings and specifications prepared by the Architect-Engineer upon completion of the Project, as more fully set forth in Article XIV. Archive Drawings are also sometimes referred to as "**CAD Archive Drawings**."
- (d) The term "**Basic Services**" means those services as more fully described in the Contract, which Architect-Engineer shall perform within the NTE Price.
- (e) The term "**Basic Consultants**" means the Consultants retained by the Architect-Engineer for the performance of structural, mechanical, and electrical engineering services and specification writing services for the Project. In addition, if the Architect-Engineer is required to provide cost estimating services, the cost estimating consultant shall be a Basic Consultant. Compensation for Basic Consultants is included as a part of the Fixed Fee established for this Contract.
- (f) The term "**Construction Budget**" means the budget established by Princeton University for the construction of the Project, including construction contingency and the Contractor's fee. The Architect-Engineer shall design the Project so that the Construction Cost does not exceed the Construction Budget as more fully set forth in Article VI(c).
- (g) The term "**Construction Cost**" means the total actual or estimated cost to Princeton University of all elements of the Project designed or specified by the Architect-Engineer, including construction contingency and the Construction Contractor's fee. Construction Cost does not include the compensation of the Architect-Engineer, the costs of the land, rights-of-way, or financing.
- (h) The term "**Construction Documents**" means the working drawings, specifications, general conditions, supplementary general conditions, special conditions, addenda, and electronic submittals developed to set forth in detail all aspects of design, function and construction and will be used for estimating the cost of the Project, securing bids for constructing the Project, and directing a contractor in construction of the Project. The Construction Documents shall be full, complete, and accurate, enabling any competent contractor to carry them out.
- (i) The term "**Construction Schedule**" means the schedule for the construction of the Project, prepared by the Contractor during the Design Development Phase.
- (j) The term "**Consultants**" refers collectively to all Basic Consultants and Specialized Consultants.
- (k) The term "**Contract**" means the contract between Princeton University and the Architect-Engineer, comprised of the Agreement and the Scope of Professional Services.
- (l) The term "**Contractor**" means the prime general contractor performing the construction work on the Project, or the contractor retained by Princeton University to provide pre-construction services.
- (m) The term "**Cure Period**" means the ten (10) day period under Article XV during which either party may cure deficiencies in performance.

(n) The term "**Design Development Documents**" means plans, outline specifications and cost estimates, and submittals developed from the Schematic Design Documents in greater detail to confirm or adjust, as required, all aspects of the schematic plans such as exterior design, mechanical and electrical systems, structural systems, area arrangement, foundation plans, etc., and revised cost information reflecting the more detailed development.

(o) The term "**Design Documents**" means collectively the Schematic Design Documents, the Design Development Documents and the Construction Documents, prepared by the Architect-Engineer and its Consultants.

(p) The term "**Design Schedule**" means the detailed schedule for the design phases of the Project, prepared by the Architect-Engineer during the Schematic Design phase, based on the Milestone Design Schedule.

(q) The term "**Fixed Fee**" means the Architect-Engineer's fixed price compensation for the performance of its Basic Services and those of its Basic Consultants. The Fixed Fee does not include compensation for Reimbursable Expenses or Specialized Consultants.

(r) The term "**Investigations**" means those investigations identified by the Architect-Engineer as being necessary for the design and construction of the Project, as more fully described in Article V(f) of the Agreement.

(s) The term "**Key Personnel**" means the essential personnel of the Architect-Engineer and its Consultants as more fully described in Article IV of the Agreement.

(t) The term "**Milestone Design Schedule**" means the schedule of critical milestones for the performance of the Architect-Engineer's Services under the Contract.

(u) The term "**NTE Price**" means the maximum compensation to the Architect-Engineer for Basic Services, which is comprised of the Fixed Fee, the Specialized Consultants NTE Amount, and the Reimbursable Expense NTE Amount. The acronym NTE stands for "not-to-exceed".

(v) The term "**Princeton University**" means The Trustees of Princeton University, the owner of the Project, acting through its Princeton University Representatives.

(w) The term "**Princeton University Representative(s)**" means the Technical Representative and the Administrative Representative of Princeton University authorized to bind Princeton University under the Contract.

(x) The term "**Project Description**" means the scope of the Project on which the Architect-Engineer's scope of Services is based and on which the Construction Budget was established.

(y) The term "**Reimbursable Expenses**" means those permitted expenses incurred by the Architect-Engineer and its Consultants in the performance of Basic Services, as more fully described in Article IX(b) of the Agreement.

(z) The term "**Reimbursable Expense NTE Amount**" means the not-to-exceed limit on the Architect-Engineer's compensation for Reimbursable Expenses incurred in the performance of Basic Services under the Contract.

(aa) The term "**Schematic Design Documents**" means drawings, outline specifications, and cost estimates developed to sufficient detail to indicate the exterior design of the Project; the functional relationships of all interior areas; the relationship of the Project to the site, other buildings and the campus; the materials used in construction; the types of mechanical, electrical and structural systems to be utilized; and the magnitude of the cost of each portion of the work.

(bb) The term "**Services**" means all services to be performed by or on behalf of the Architect-Engineer pursuant to this Contract, including services performed by the Architect-Engineer, and by Basic Consultants and Specialized Consultants engaged by the Architect-Engineer.

(cc) The term "**Specialized Consultants**" means the consultants, other than Basic Consultants, retained by the Architect-Engineer, as approved by Princeton University, including without limitation, civil

engineering, acoustics, audio-visual, food service, lighting, security, landscape design, interior design, and graphics design.

(dd) The term "**Specialized Consultant NTE Amount**" means the not-to-exceed limit on the Architect-Engineer's compensation for Basic Services performed by Specialized Consultants.

(ee) The term "**Statement of Construction Cost**" means the periodic estimates of the Construction Cost of the Project prepared at the end of each design phase by the Contractor and, if included in the Architect-Engineer's scope of Services, by the Architect-Engineer's cost Consultant.

(ff) The term "**Substantial Completion**" means substantial completion of the construction contract, as defined therein.

(gg) The term "**Work**" means all construction work for the Project to be performed by the Contractor or any other person or entity engaged by Princeton University as specified in the contract documents setting forth the Work.

ARTICLE III - DESIGNATED REPRESENTATIVES

(a) The Architect-Engineer's designated representatives are:

Tod Williams & Billie Tsien - Principals in Charge

Jonathan Reo - Project Manager

(b) Princeton University's designated project and administrative representatives (individually and collectively herein "Princeton University Representatives") are:

Sam Rozycki - Project Manager (Technical Representative)

Sharon R. Warkala - Contract Administrator (Administrative Representative)

(c) Agreements made by and/or actions taken by the Architect-Engineer, which by their nature effect a change to this Contract, shall only be binding upon Princeton University when such agreement or action is specifically authorized in writing, in advance, by a Princeton University Representative. Therefore, any change undertaken by the Architect-Engineer at the direction of anyone other than a Princeton University Representative, or without the prior written authorization of a Princeton University Representative, is at the Architect-Engineer's own risk.

ARTICLE IV - KEY PERSONNEL AND CONSULTANTS

(a) **Architect-Engineer's Key Personnel.** The Key Personnel of the Architect-Engineer specified below, if any, are considered to be essential to the Services being performed hereunder:

Tod Williams, Principal-In-Charge

Jonathan Reo, Project Manager

Billie Tsien, Principal-In-Charge

Evan Ripley, Project Architect

Philip Ryan, Senior Associate

(b) **Basic Consultants.** The Basic Consultants (including any Key Personnel), to be used by the Architect-Engineer in the performance of this Contract, are:

Basic Consultant	Discipline	Key Personnel
Arup	MEP Engineer	Fiona Cousins Brian Haggerty
Ballinger	Associate Architect	Eva Lew David Lang
Cost Estimator	Faithful & Gould	Paul Male
Frank Hubach Associates	Acoustics	Frank Hubach Steve Neal

Basic Consultant	Discipline	Key Personnel
Jacobs Consultancy	Laboratory Consultant	Josh Meyer Kathy Machin
Jacobs	Cleanroom Architect/Consultant	Bob Patterson Greg Owen
Severud Associates	Structural Engineer	Ed Messina Brian Falconer

(c) **Specialized Consultants.** The Specialized Consultants (including any Key Personnel), to be used by the Architect-Engineer in the performance of this Contract are:

Specialized Consultant	Discipline	Key Personnel
RW Sullivan	Code Consultant	Kevin Hastings
Transsolar	Sustainability Consultant	Thomas Auer Erik Olsen
TBD	AV	TBD
TBD	Curtainwall Consultant	TBD
TBD	Elevator Consultant	TBD
TBD	Graphics	TBD
TBD	Hardware	TBD
TBD	Lighting	TBD
TBD	Spec Writer	TBD
TBD	TEL/ DATA	TBD
TBD	Security	TBD
TBD	Waterproofing Consultant	TBD

(d) **Change in Key Personnel or Consultants.** Prior to reassigning any of the specified Key Personnel to other projects, the Architect-Engineer shall notify Princeton University reasonably in advance and shall submit justification (including proposed substitutions) in sufficient detail to permit evaluation of the impact on the Project. This Contract may be amended from time to time during the course of the Contract to either add or delete Key Personnel, as appropriate. Any change to the Key Personnel listed above is subject to Princeton University's prior written approval, which shall not be unreasonably withheld, and any such change made without the prior written approval of Princeton University may be considered a material breach of the Contract. Refer to Article VI(d)(4) regarding substitutions of Consultants.

ARTICLE V - PRINCETON UNIVERSITY'S RESPONSIBILITIES

(a) **Project Requirements.** Prior to execution of this Contract, Princeton University has provided to the Architect-Engineer the Project Description, which comprises Part II of the Contract, and which sets forth a description of Princeton University's design objectives, constraints, and criteria and specifies the space requirements and relationships, flexibility and expandability, special equipment and systems and site requirements for the Project. Throughout the term of the Contract, Princeton University shall consult with the Architect-Engineer and provide in a timely manner such additional information as may be reasonably necessary for the Architect-Engineer to perform Architect-Engineer's Services under this Contract.

(b) **Project Schedule.** Prior to execution of this Contract, Princeton University has established the Project schedule. Princeton University will update the overall Project schedule as necessary.

(c) **Construction Budget.** Prior to execution of this Contract, Princeton University has established the Construction Budget for the Project, which is based on the Project Requirements described in paragraph (a) above. The Construction Budget for the Project is **\$102,290,000.00** as more fully set forth in the Part II Project Description. Note that the Construction Budget has been established using current year dollars (**March 2010**) and that Princeton University will account for all escalation in its overall project budget (and not in the Construction Budget). An increase in the Construction Budget by Princeton University due to escalation shall not be a reason for an increase in the Architect-Engineer's Fixed Fee, nor in the Specialized Consultant NTE Amount nor the Reimbursable Expenses NTE Amount.

(d) **Review and Approval of Documents; Responsiveness.** The Princeton University Representative shall examine the documents submitted by the Architect-Engineer and shall render decisions pertaining thereto promptly to avoid unreasonable delay in the progress to the Architect-Engineer's Services.

(e) **Existing Conditions Documents.** Upon request, Princeton University will provide access to and copies of all available drawings and other documents describing the physical characteristics of the site of the Project. Architect-Engineer shall rely upon the completeness and accuracy of any and all information provided by, or on behalf of, Princeton University.

(f) **Surveys.** Princeton University will provide surveys of the site as mutually agreed upon with Architect-Engineer, and the Architect-Engineer is entitled to rely on the accuracy of such surveys.

(g) **Testing.** Princeton University will provide geo-technical, structural, mechanical, chemical, air and water pollution tests for hazardous materials and other laboratory and environmental tests, inspections, and reports required by law. The Architect-Engineer shall inform Princeton University of all surveys, investigations, inspections, or tests (collectively "Investigations") which should be performed for the proper design and construction of the Project, but which are not within the scope of Architect-Engineer's Services under this Contract, and render advice as to when such Investigations should be performed to avoid any delay to the completion of the Project. The Architect-Engineer shall assist Princeton University in preparing all information and instructions needed to enable Princeton University to solicit proposals for any such Investigations and to engage appropriate consultants to perform such Investigations. The Architect-Engineer shall review the results of all Investigations as they apply to Architect-Engineer's design of the Project and take them into account appropriately in designing the Project.

(h) **Hazardous Materials.** Princeton University will provide services relating to hazardous or toxic waste removal, including but not limited to, detection and abatement of all such hazards. Under no circumstances whatsoever shall Architect-Engineer have any responsibility for the discovery, presence, handling, removal or disposal of or exposure of persons to hazardous materials in any form at the Project site, including, but not limited to, asbestos, asbestos products, polychlorinated biphenyl (PCB), bacteria, mold, fungi, or other toxic substances, radon, infectious materials, or contaminants.

(i) **Notice of Defects.** Notice shall be given by Princeton University to the Architect-Engineer and by the Architect-Engineer to Princeton University if either party becomes aware of any fault or defect in the Project or nonconformance with the Construction Documents.

ARTICLE VI – ARCHITECT-ENGINEER'S GENERAL RESPONSIBILITIES

(a) **Standard of Care.** Architect-Engineer shall perform the Services hereunder this Agreement in accordance with the standards of skill and care generally exercised by other design professionals in the same locale acting under similar circumstances and conditions.

(b) **Project Administration Services.** The Architect-Engineer shall provide all project administration services necessary to facilitate the orderly progress of the Project, including attending Project meetings, communicating with others as appropriate, monitoring progress and issuing progress reports to Princeton University, supervising Architect-Engineer's in-house personnel, directing Architect-Engineer's Consultants and coordinating and managing information flow and decision-making.

(c) **Schedule for Architect-Engineer's Services.**

(1) **Milestone Design Schedule.** By executing this Contract, the Architect-Engineer represents to Princeton University that the Milestone Design Schedule as set forth in Article XI herein is reasonable for the scope of Services to be performed hereunder.

(2) **Design Schedule.** During the Schematic Design Phase, the Architect-Engineer shall prepare a comprehensive Design Schedule, based on the Milestone Design Schedule. The Design Schedule shall be presented in Princeton University's required format, and shall be prepared using computer software designated by Princeton University. The Design Schedule shall be provided to Princeton University electronically or on diskette upon request. The Design Schedule shall include all milestones identified in the Milestone Design Schedule, and shall identify deadlines for information exchange and decision-making, major meetings, progress and end-of-phase document submissions, Princeton University review/approval periods, submission for approval of authorities having jurisdiction, and value engineering sessions or other major activities as are appropriate to the Project. The Architect-Engineer shall continuously monitor the Design Schedule and shall notify Princeton University of actions required to maintain the schedule. The Architect-Engineer shall update the Design Schedule at each project meeting; provided, however, that milestone dates may be modified only with the approval of Princeton University.

(3) **Construction Schedule.** The Contractor shall prepare the proposed Construction Schedule for the Project (during the design phase in which the construction contract is executed). The Construction Schedule shall coordinate, integrate and combine schedules for all aspects of the Project, including the design, bidding, negotiation and construction phases, incorporating a detailed schedule of pre-construction activities, construction activities sequences and durations, allocations and scheduling of labor activities, purchase order placement and deliveries of materials and equipment, preparation and processing of shop drawings and submittals, and Architect-Engineer's and Princeton University's review time, and including a schedule for the Architect-Engineer's services under this Contract. Such schedule shall be in format and detail satisfactory to Princeton University, and shall include a construction scheduling plan based upon the critical path method detailing the working days necessary for the critical path, noncritical path, and float time in the sequence of the Work and analysis and explanation thereof. If such schedule will require Architect-Engineer to complete some or all of its services under this Contract within time intervals shorter than those illustrated in the Architect-Engineer's Design Schedule, Contractor shall consult with the Architect-Engineer in analyzing, alternatives for complying with such shorter time schedule. The Contractor's proposed Construction Schedule shall be subject to the review and acceptance of Princeton University, and upon approval by Princeton University, the Construction Schedule shall be the binding schedule for Architect-Engineer's performance of its duties under this Contract.

(4) In the event Architect-Engineer is delayed in the performance of its Services through no fault of its own, then Architect-Engineer may be entitled to an adjustment in the time required to perform its Services. Architect-Engineer will promptly notify Princeton University of any such delay that will have a possible impact on the schedule.

(d) **Project Cost Control.**

(1) **Duty to Design the Project Within the Construction Budget.** Architect-Engineer shall design the Project so that the Construction Cost to construct the Project in accordance with the Construction Documents prepared by the Architect-Engineer and its Consultants does not exceed the Construction Budget. The Architect-Engineer acknowledges that the Construction Budget includes adequate provision for the construction of all elements of the Project designed by or specified by the Architect-Engineer and its Consultants as contemplated by the Project Description attached as Part II of the Contract.

(2) **Modification of Construction Budget.** The Architect-Engineer acknowledges that it is expected that the Construction Budget will not change throughout the duration of the Project, except to the extent that Princeton University makes changes to the Project Description for the

Project on which the Construction Budget was based. If Princeton University proposes changes to the mutually agreed upon Project Description, the Architect-Engineer shall inform Princeton University of the cost implications to the Project. The Construction Budget may be modified only in a writing executed by Princeton University and may result in an adjustment to the Fixed Fee where there has been a change to the Project Description. However, should Princeton University, without change to the Project Description, increase the Construction Budget for any reason attributable to Architect-Engineer's failure to design the Project within the Construction Budget, the Architect-Engineer's Fixed Fee shall remain unchanged even if such increase in the Construction Budget is attributable to the Contractor's estimating errors, lack of reasonable efforts to maximize subcontractor competition, or other reasons within the control of the Contractor.

(3) **Periodic Statements of Construction Cost.** Princeton University will require the Contractor to prepare and update detailed Statements of Construction Cost based on the Design Documents prepared by Architect-Engineer. In addition, if included in the Architect-Engineer's scope of Services, the Architect-Engineer shall retain a cost estimating consultant to independently prepare and periodically update Statements of Construction Cost in a format compatible with that of the Contractor. Such Statements of Construction Cost shall be prepared and submitted in accordance with the schedule set forth in Article XI, Time of Performance. The Contractor (and the Architect-Engineer's cost estimating Consultant, if any), shall monitor the development of the Design Documents by the Architect-Engineer and shall monitor the costs of materials, building systems, equipment and labor and shall develop detailed cost data from which their respective Statements of Construction Cost can be prepared. The Contractor shall also inform Princeton University and the Architect-Engineer of any component the cost of which would reasonably be expected to have a material impact on the Construction Cost of the Project. Each Statement of Construction Cost shall be in a CSI format, or other suitable format agreed upon by Princeton University, to allow comparison. The Architect-Engineer shall specifically identify any escalation factors included (and the corresponding rationale). Note that the Contractor's fee calculation shall not include general conditions costs or construction contingency.

At the end of each design Phase of the Project, and after submission of each Statement of Construction Cost, Princeton University, the Architect-Engineer and the Contractor shall meet to review and discuss the scope of work and the corresponding Statements of Construction Cost (and, where the Architect-Engineer has retained a costing estimating Consultant, to reconcile any differences between the respective Statements of Construction Cost). In the event that the Contractor's Statement of Construction Cost (or the reconciled Statement of Construction Cost where the Architect-Engineer has retained a cost Consultant) exceeds the Construction Budget by more than five percent (5%), then Architect-Engineer shall, if requested by Princeton University, redesign the Project and, after consultation with Princeton University and the Contractor, revise the Design Documents on the basis of which such Statement of Construction Cost was prepared, until Contractor (and the Architect-Engineer's cost Consultant, if any) are able to issue a revised Statement of Construction Cost that does not exceed the Construction Budget. All services with respect to the revision of Design Documents because the Statement of Construction Cost exceeded the Construction Budget by more than five percent (5%) shall be provided by Architect-Engineer as part of Basic Services at no additional cost to Princeton University. In the event that the Contractor's Statement of Construction Cost exceeds the Construction Budget by five percent (5%) or less and Princeton University seeks to have Architect-Engineer revise the Design Documents, then Architect-Engineer shall revise the Design Documents as an Additional Service. Further, if the Contractor's Statement of Construction Cost (or the reconciled Statement of Construction Cost where the Architect-Engineer has retained a cost consultant) is greater than the Construction Budget due solely to Contractor's estimating errors, lack of reasonable efforts to maximize subcontractor competition, or other reasons within the control of the Contractor, then any redesign services performed by the Architect-Engineer shall be considered an Additional Service.

(4) **Taxes.** Princeton University, as an exempt organization, is exempt from New Jersey sales taxes under Exemption No. EO-210-634-501, and from New Jersey excise taxes under Exemption No. A-110839. Princeton University interprets the applicable state statute, N.J.S.A.

54:32B-8.22 to apply this exemption to all purchases by contractors, subcontractors and repairmen of materials, supplies or services for the exclusive use in erecting structures or building on, or otherwise improving, altering or repairing its real property. In preparing Statements of Construction Cost, Architect-Engineer shall not include sales taxes or excise taxes on those elements of Construction Cost which are not subject to New Jersey sales or excise tax.

(e) **Engagement of Basic Consultants and Specialized Consultants.** The Architect-Engineer agrees to engage all Basic Consultants and Specialized Consultants as are required for the proper design and job observation during the construction period of the Project.

(1) **Architect-Engineer's Responsibility Regarding Consultants.** Architect-Engineer represents that Architect-Engineer has made thorough investigation of all Consultants to be utilized in performance of the Contract to assure that such Consultants possess the skill, knowledge and experience qualifying them to perform those aspects of the Contract to be performed by them at a standard for design of projects of comparable complexity and to assure that such Consultants can perform without delay the required services in their areas of expertise at a cost which is reasonable and is within the allowances for such cost which have been taken into account by Architect-Engineer in agreeing to the compensation provided for in this Contract.

(2) **Princeton University Approval of Consultants.** All Consultants proposed by the Architect-Engineer shall be subject to the review and approval of Princeton University in advance, which approval shall not be unreasonably withheld. Princeton University hereby approves Architect-Engineer's use of the Consultants selected by Architect, in the indicated areas of work, as specifically listed in Article IV(b) and IV(c) of the Agreement. The Architect-Engineer acknowledges and agrees that except with respect to the areas so indicated in the Agreement, Consultants are not required for the Project. If a Consultant is indicated in the Agreement as being required for the Project, but the name of the Consultant is not specifically identified, the Architect-Engineer shall submit the recommended Consultant to Princeton University for review and approval before any work is performed by such Consultant. Nothing in this section shall relieve Architect-Engineer of Architect-Engineer's sole and prime responsibility for the performance of the Contract, including all performance by Consultants.

(3) **Consultant Agreements.** Architect-Engineer, shall upon request, provide to Princeton University complete and correct copies of Architect-Engineer's agreement with each Consultant, including amendments thereto. Architect-Engineer shall enter into an agreement with each Consultant pursuant to which the Consultant assumes toward the Architect-Engineer all of the obligations that the Architect-Engineer assumes toward Princeton University under the Contract. In addition, each contract shall include the following provisions:

- (i) An agreement by the Architect-Engineer and Consultant that Princeton University is a third-party beneficiary of the agreement, entitled to enforce any rights thereunder for its benefit, and that Princeton University shall have the same rights and remedies vis-à-vis such Consultants that the Architect-Engineer may have, including, but not limited to, the right to be compensated for any loss, expense or damage of any nature whatsoever incurred by Princeton University, resulting from any breach of such agreements by the Consultant, any breach of representations arising out of such agreements and any negligent error or omission of such Consultant in the performance of any of its professional services obligations under such agreements; and
- (ii) A provision requiring the Consultant to maintain Professional Liability Insurance in amounts required by Article XII hereof or in such other amounts reasonably available and approved in writing by Princeton University throughout the term of this agreement; and
- (iii) A provision that Princeton University may at reasonable times and after notice to the Architect-Engineer, contact the Consultant to discuss any aspect of the Consultant's services; provided that Princeton University shall furnish to the

Architect-Engineer a copy of any such correspondence and further provided that Princeton University shall not direct the services of the Consultant; and

- (iv) A provision that upon the filing of a petition under the Federal Bankruptcy Code by the Architect-Engineer, Princeton University shall have the right to enter into an agreement with the Consultant at the same price, with the Consultant being obligated to perform the same duties it otherwise would have performed under this Contract with the Architect-Engineer; and
- (v) A provision that grants to Princeton University all rights to Consultant's documents set forth in Article XIII hereof.

(4) **Substitution of Consultants.** No substitution of Consultants from those listed in the Agreement, no alteration of the area of work for particular Consultants identified in the Agreement, and no use of additional Consultants shall be made without prior written approval of Princeton University, which shall not be unreasonably withheld. Requests for approval must include a clear description of the work to be performed, the capability of the proposed Consultant and the method of payment.

(5) **Termination of Consultant Agreements.** Princeton University reserves the right to require Architect-Engineer to terminate contracts or agreements with any Consultants retained by Architect-Engineer for performance of services under this Contract. Any compensation for which Princeton University may be liable as a result of such termination shall be limited to amounts as described in Section Article XV hereof. In the event of any termination of any Consultant contracts or agreements by Architect-Engineer, whether or not required by Princeton University, Architect-Engineer will ensure prompt delivery of all records, documents, working papers, calculations, computer programs, data, drawings, plans, specifications and other work product, and all equipment, materials, items or objects acquired by the Consultant and reimbursed by Architect-Engineer and/or Princeton University pertaining to services performed under this Contract to the time of termination.

(f) **Coordinated Services.** The Architect-Engineer acknowledges that it is essential that all Services in connection with the Project be coordinated, including services provided by Princeton University. The Architect-Engineer shall coordinate the services of all its architects, engineers, Basic Consultants and Specialized Consultants for the Project, shall review and check all drawings and specifications prepared by architects, engineers, Basic Consultants and Specialized Consultants for the Project, and shall make modifications as necessary, to assure that they are integrated into a coordinated and complete set of documents prior to each submission. In addition, the Architect-Engineer shall coordinate its Services with services provided by Princeton University and Princeton University's in-house architects.

(g) **Princeton University-Furnished Information.** The Architect-Engineer shall identify information or documents required to be provided by Princeton University for the Project, and, if necessary, shall gather available documents from Princeton University's identified record storage location. The Architect-Engineer shall assemble, review, and coordinate data furnished by Princeton University, to include Princeton University's construction contract agreements.

(h) **Design Criteria, Laws, Codes, and Regulations.** The Architect-Engineer shall identify and research all design criteria, laws, codes, regulations and ordinances applicable to the Project, and shall, in accordance with Standard of Care set forth in Article VI(a), design the Project to be in compliance therewith. Princeton University acknowledges that the American with Disabilities Act ("ADA") may be subject to various and possibly contradictory interpretations. Architect-Engineer shall use reasonable efforts and care in interpreting and advising Princeton University as to the requirements for the Project to comply with the ADA and other statutes, ordinances, codes, rules, regulations, orders and requirements. In the event that there is a conflict between various laws, codes, regulations, ordinances, or Princeton University Design Standards, Architect-Engineer will notify Princeton University of the nature and impact of such conflict, and Princeton University agrees to cooperate and work with the Architect-Engineer in its efforts to resolve any conflicts prior to the issuance of Construction Documents. If appropriate, and with Princeton University's approval, at times appropriate to the project phase, the Architect-Engineer and/or

its Consultants shall review the Project with authorities having jurisdiction. The Architect-Engineer shall prepare necessary written and graphic explanatory materials, and appear on Princeton University's behalf at agency meetings. All such visits shall be made with Princeton University's Representative. If required for the Project and authorized by Princeton University, the Architect-Engineer shall prepare necessary code variance applications.

(i) **Value Engineering.** The Architect-Engineer shall generate value engineering suggestions or proposals when the Statement of Construction Cost is greater than the Construction Budget or when requested by Princeton University. The Architect-Engineer shall review and analyze value engineering suggestions or proposals submitted by any other party, including Princeton University and the Contractor. If the Architect-Engineer determines that the value engineering suggestion or proposal is suitable for incorporation into the design of the Project, the suggestion or proposal shall be incorporated into the Architect-Engineer's Design Documents, and the Architect-Engineer shall be responsible for the Design Documents regardless of the source of the value engineering suggestion or proposal. If the Architect-Engineer determines that the value engineering suggestion or proposal is not suitable for incorporation into the design of the Project, the Architect-Engineer shall provide a concise, but complete, explanation to Princeton University of the reasons for such determination.

(j) **Princeton University Design Standards.** The Architect-Engineer shall design the Project to comply with the Princeton University Facilities Design Standards Manual, Release 7.0, March 2008 (the "Design Standards"). If the Architect-Engineer judges an aspect of the Design Standards to be in conflict with a Project requirement, or with any law, code, or regulation, or to be otherwise detrimental to the Project, the Architect-Engineer shall so notify, and abide by written direction from, the Princeton University Representative; provided, however, that if in the judgment of the Architect-Engineer any such direction from the Princeton University Representative would violate applicable codes or sound design practice, the Architect-Engineer shall so notify the Princeton University Representative before proceeding. If the Architect-Engineer deviates from the Design Standards without specific written authorization from Princeton University to do so, Princeton University may instruct the Architect-Engineer to modify the Design Documents as necessary, without additional compensation, to comply with the Design Standards. In the event that any aspect of the Project is constructed in a manner which deviates from the Design Standards without Architect-Engineer obtaining specific written authorization from Princeton University for such deviation, then, in addition to any other rights or remedies which may be available pursuant to the terms of this Contract or by operation of law, Princeton University specifically reserves the right to claim an error or omission on the part of the Architect-Engineer in that regard and may seek indemnification therefore.

(k) **Design Documents.** The Architect-Engineer shall submit design documents to Princeton University for purposes of evaluation and approval by Princeton University. Subject to the provisions contained in the next sentence hereof, the Architect-Engineer shall be entitled to rely on approvals received from Princeton University in the further development of the design. Princeton University's approval of the Architect-Engineer's design documents contemplated herein and in other portions of this Contract shall not be for the purpose of determining the accuracy, adequacy, or completeness of such documents, and shall not alter the Architect-Engineer's responsibilities with respect to such documents.

(l) **Meetings.** The Architect-Engineer shall schedule all meetings with Princeton University through the Princeton University's Project Manager. The Architect-Engineer shall prepare an agenda for and minutes of all meetings attended by the Architect-Engineer, except for construction meetings for which the Contractor is assigned to keep the minutes or meetings led by Princeton University, noting in sufficient detail: topics discussed; information presented and reviewed; decisions made; comments and observations; and "ACTION" items, which shall specifically identify individual responsible, tasks to be undertaken and the date anticipated for completion. The Architect-Engineer shall distribute the minutes within one week of the documented meeting.

(m) **Communications.** The Architect-Engineer shall have facsimile capability and at least one e-mail address per office.

(n) **Princeton Collaborative System (PCS).**

(1) **System Overview.** Princeton University requires all Contractors and Architect-Engineers to participate in a web-based project management application (Centric Project). The application is hosted on Princeton University servers which are maintained by Princeton University staff. The web application is customized by Princeton University and provides for a unique web page for any project. It is the intent for all documentation, correspondence, and construction information that would normally be provided to Princeton University to be posted and stored on the project web site.

(2) **Minimum System Requirements.** The following summarizes the minimum system requirements for all Contractor's and Architect-Engineers to possess in order to participate. It is the responsibility of all Contractors and Architect-Engineers to possess these minimum requirements at no additional cost to Princeton University.

- (i) 233 MHz Pentium II or better (800Mhz Pentium III or better recommended)
Microsoft Windows 2000 SP3, 2000 SP4, XP, or XP SP1
Minimum 65 MB free hard disk space for User Tools and ActiveX controls
Minimum 130 MB of temporary free space used during installation of User Tools and ActiveX controls
Windows 2000 and XP: 128 MB RAM (512 MB recommended)
Video card and display capable of True Color (24-bit) and a minimum of 32 MB of video memory (OpenGL driver recommended)
Microsoft Internet Explorer 6.0 or 6.0 SP1
MDAC 2.8
Broadband Internet Connection
- (ii) The downloadable tools are available at no cost from Princeton University's server. Users will be required to make relatively modest adjustments to their web browser and e-mail settings. Self service IT support may be required.
- (iii) Training sessions will be provided on campus by Princeton University at no cost. Users should allow approximately 3 hours of training per person.

(3) **Responsible Users/Project Team Members.** All users who are responsible for, or wish to retain individual ownership rights to, project specific documentation, correspondence, drawings or other information will be considered an individual entity on the project team, and will be required to attend training.

(4) **Roles and Responsibilities.** The following demonstrates the required level of involvement and contribution to the PCS process; however, the Project Manager and the Architect-Engineer will mutually establish the specific protocols, tasks, and requirements for this Project:

- (i) All Team Members. All team members will be required to perform the following tasks on a daily basis: convert all correspondence to electronic format and post them to web site; generate 'e-mail', schedule meetings and assign tasks through the PCS tool. (PCS synchronizes with MS Outlook calendar, task, and e-mail functions.)
- (ii) Contractor. PCS will track Requests for Information, Submittals, Task Assignments (Tracked Activities), Punch Lists, and various other processes. If the Contractor chooses to maintain parallel tracking in another project management software, a certain level of copy/paste duplicate entry will be required. PCS offers customizable logs and reports for these applications. Princeton University will offer initial technical support to develop basic reports, with the Contractor's input.
- (iii) Architect-Engineers. All drawings will be posted to the PCS site. While a static format may be used during the course of the project, the final archive must

contain full .DWG files with X-Refs and in accordance with Princeton University Design Standards.

(o) **No Conflict of Interest.** Except with Princeton University's knowledge and consent, the Architect-Engineer shall not engage in any activity, or accept any employment, interest, or contribution that would reasonably appear to compromise the Architect-Engineer's professional judgment with respect to this Project.

(p) **Confidential Information.** The Architect-Engineer shall maintain the confidentiality of information specifically designated as confidential by Princeton University, unless withholding such information would violate applicable law, create the risk of significant harm to the public or prevent the Architect-Engineer from establishing a claim or defense in an adjudicatory proceeding. The Architect-Engineer shall require its Consultants to maintain the confidentiality of information specifically designated as confidential by Princeton University.

ARTICLE VII – ARCHITECT-ENGINEER'S BASIC SERVICES

(a) Basic Services of the Architect-Engineer shall include the services of all professional and technical disciplines needed to perform the services described in this Article. These services shall be performed according to generally accepted standards of professional practice.

(b) General Project Services. The Architect-Engineer shall provide the following services throughout all phases of the Project.

(1) Cost Estimating Services **are** are not included in the scope of Basic Services under this Contract.

(2) Building Commissioning (Design Phase) Services (refer to Section 3.3 of the Princeton University Design Standards Manual) **are not** included in the scope of Basic Services under this Contract. If it is indicated that these services **are not** included in this Contract and Princeton University elects to obtain these services from a third party consultant under a separate contract, the Architect-Engineer shall coordinate its services with this consultant pursuant to Article VI(e).

(3) Fire Suppression System. The Architect-Engineer shall comply with the procedural guidelines set forth in Section 3.7, paragraph 6, of the Princeton University Design Standards Manual.

(4) Structural System. The Architect-Engineer shall provide a fully-engineered structural system (steel, wood, etc.).

(c) As a part of its Basic Services, Architect-Engineer shall provide services that may be reasonably required in connection with the work of the Contractor retained by Owner such as a limited number of additional meetings and coordination efforts that may be needed as a result of additional analyses and evaluations, construction scheduling, value engineering, cost estimate reconciliations and other services that would not normally be required.

(d) **Schematic Design Services.** The Architect-Engineer shall provide the following schematic design phase services:

(1) **Commencement and Completion.** The Schematic Design Phase shall commence upon written directive from Princeton University and shall be considered complete for purposes of final payment for the Phase upon the approval by Princeton University of the Schematic Design Documents.

(2) **Verification of Existing Conditions.** The Architect-Engineer shall be required to verify existing configurations of space, field measurements of critical dimensions, types and conditions of architectural, mechanical, electrical and other systems, and existing sizes and capacities of systems and equipment, based on Princeton University-provided information and visual inspection within the Project area. However, in the event that Architect-Engineer identifies a discrepancy, inaccuracy or deficiency in the documentation and information received by or on

behalf of Princeton University, then Architect-Engineer shall promptly notify Princeton University of such discrepancy, inaccuracy, or deficiency.

(3) **Analysis of Alternatives.** Subject to Article VII(c) herein, consider alternative approaches to the design of the Project, with the aim of best meeting Princeton University's stated objectives for the Project, including scope, cost, schedule, and design intent.

(4) **Architectural Design.** Based on the Project Description, the Construction Budget and other design criteria, prepare preliminary plans, preliminary sections and building elevations, preliminary selection of building systems and materials, summary of areas and volumes, and perspective sketches or study models where appropriate to convey three-dimensional aspects of the design, including code review and analysis as necessary. This shall include any special design considerations requiring Specialized Consultants.

(5) **Structural Design.** Review with Princeton University alternate structural materials and systems. Develop conceptual design solutions for selected systems. Identify system characteristics and limitations, including practical span lengths and bay spacing, and typical sizes of structural members.

(6) **Mechanical Design.** Develop conceptual design solution for connection to existing services, heating and ventilating, air conditioning, energy conservation, plumbing, fire protection, special mechanical systems, and control systems. Prepare preliminary load assessments, and identify general space requirements. Review with Princeton University alternate materials, systems and equipment.

(7) **Electrical Design.** Develop conceptual design solutions for power service and distribution, lighting, telephones, fire detection and alarms, security systems, electronic communications, and special electrical systems. Identify general space requirements. Review with Princeton University alternate materials, systems and equipment.

(8) **Civil Design.** If required, develop conceptual design solutions for on-site utility systems, fire protection systems, drainage systems, grading paving, curb cuts, and off-site utility systems improvements required for the project. Review with Princeton University alternate materials and systems.

(9) **Landscape Design.** In concert with Princeton University's separately contracted Landscape Architect (Michael Van Valkenburg Associates), review with Princeton University alternate materials, systems and equipment. If required, develop conceptual design solutions for land forms, lawns and plantings based on program requirements, physical site characteristics, design objectives and environmental determinants.

(10) **Materials, Research and Specifications.** Review with Princeton University applicable performance criteria and quality standards for potential materials, systems and equipment. Investigate availability and suitability of alternative materials, systems and equipment and make recommendations to Princeton University. Prepare outline specifications in accordance with the Construction Specification Institute (CSI) Manual of Practice.

(11) **Presentations.** Present Schematic Design Documents to Princeton University, and respond to questions. Documents shall be presented in a format acceptable to Princeton University.

(12) **Princeton University's Comments.** Record, evaluate, and respond to Princeton University's comments based on the review of the Schematic Design Documents. Modify the Schematic Design Documents to correct deficiencies, and identify changes which will be incorporated into the design of the Project during the Design Development Phase. Identify any Princeton University-requested design changes, which require additional services.

(13) **Tests and Inspections.** The Architect-Engineer shall advise Princeton University of any need or advisability of the Princeton University securing any tests, analyses, studies, reports, or Consultants in connection with the development of the Design Documents for the Project.

(14) **Statement of Construction Cost.** In accordance with the schedule set forth in Article XI, Time of Performance, submit to Princeton University a Statement of Construction Cost in accordance with Article VI(c).

(15) **Review of Statement of Construction Cost -- Redesign.** Princeton University, the Architect-Engineer and the Contractor shall meet to review and discuss the scope of work and the corresponding Statement of Construction Cost (and to reconcile any differences between the Statements of Construction Cost pursuant to Article VI(c)(3), if the Architect-Engineer has retained a cost estimating Consultant). In the event that the Contractor's Statement of Construction Cost (or the reconciled Statement of Construction Cost, if the Architect-Engineer has retained a cost estimating Consultant) is greater than the Construction Budget, the Architect-Engineer shall in accordance with Article VI(c), if requested by Princeton University, as part of Basic Services and at no additional cost to Princeton University, redesign the Project and, after consultation with Princeton University and the Contractor, revise the Schematic Design Documents on the basis of which such Statement of Construction Cost was prepared, until Contractor (and the Architect-Engineer's cost Consultant, if any) are able to issue a revised Statement of Construction Cost that does not exceed the Construction Budget.

(e) **Design Development Phase Services.** The Architect-Engineer shall provide the following design development phase services:

(1) **Commencement and Completion.** The Design Development Phase shall commence upon written directive from Princeton University and shall be considered complete for purposes of final payment for the Phase upon the approval by Princeton University of the Design Development Documents.

(2) **General.** Based on the approved Schematic Design Documents, incorporating Princeton University's review comments and any adjustments authorized by Princeton University to the program, schedule, or construction budget, further develop the design of the project; resolve remaining design issues with Princeton University; research materials, systems, and equipment; prepare Design Development Documents (including outline specifications), all subject to Princeton University's approval; perform code review and analysis as necessary.

(3) **Architectural Design.** Establish the final scope, relationships, forms, size and appearance of the Project through plans, sections and elevations; typical construction details; final materials selection; equipment layouts; and perspective sketches and study models where appropriate to convey three-dimensional design intent.

(4) **Structural Design.** Based on the approved structural system, establish final structural design criteria, foundation design criteria, bay spacing and other dimensions, preliminary sizing of major structural components, critical coordination clearances, and outline specifications.

(5) **Mechanical Design.** Perform HVAC load calculations, and plumbing fixture counts. Establish equipment sizes and capacities; equipment, distribution, and piping layouts; required space for equipment; required chases and clearances; acoustical and seismic controls; visual impacts; energy conservation measures, and develop control schematics.

(6) **Electrical Design.** Establish the final scope of the lighting, electrical, and communication systems. Establish sizes and capacities of major components; equipment layouts; required space for equipment; required chases and clearances, and energy conservation measures.

(7) **Civil Design.** Establish the final scope and preliminary details for on-site and off-site civil engineering work.

(8) **Millwork Design.** Establish final scope and preliminary details relative to interior construction of the Project; special interior design features; built-in furniture; furnishings, and equipment selections; and materials, finishes and colors.

(9) **Landscape Design.** In concert with Princeton University's separately contracted Landscape Architect (Michael Van Valkenburg Associates), establish final scope and preliminary details for landscape construction, materials, plantings, fixtures, and furnishings.

(10) **Specifications.** Prepare a design development specification consisting of summary specification sections organized according to the CSI Division 16 format. Review Division 1 sections provided by Princeton University, and submit proposed modifications.

(11) **Presentations.** Present Design Development Documents to Princeton University, and respond to questions. Documents shall be presented in a format acceptable to Princeton University.

(12) **Princeton University's Comments.** Record, evaluate, and respond to Princeton University's comments based on the reviews of the 100% Design Development Documents. Modify the Design Development Documents to correct deficiencies and incorporate Princeton University comments, and identify changes, which will be incorporated, into the design of the Project during the Construction Documents Phase. Identify any Princeton University-requested design revisions, which require additional services.

(13) **Detailed Statement of Construction Cost.** In accordance with the schedule set forth in Article XI, Time of Performance, submit to Princeton University a detailed Statement of Construction Cost in accordance with Article VI(c).

(14) **Review of Statement of Construction Cost; Redesign.** Princeton University, the Architect-Engineer and the Contractor shall meet to review and discuss the scope of work and the corresponding Statement of Construction Cost (and to reconcile any differences between the Statements of Construction Cost pursuant to Article VI(c)(3), if the Architect-Engineer has retained a cost estimating Consultant). In the event that the Contractor's Statement of Construction Cost (or the reconciled Statement of Construction Cost, if the Architect-Engineer has retained a cost estimating Consultant) is greater than the Construction Budget, the Architect-Engineer shall in accordance with Article VI(c), if requested by Princeton University, as part of Basic Services and at no additional cost to Princeton University, redesign the Project and, after consultation with Princeton University and the Contractor, revise the Design Development Documents on the basis of which such Statement of Construction Cost was prepared, until Contractor (and the Architect-Engineer's cost Consultant, if any) are able to issue a revised Statement of Construction Cost that does not exceed the Construction Budget.

(f) **Construction Documents Phase Services.** The Architect-Engineer shall provide the following construction documents phase services:

(1) **Commencement and Completion.** The Construction Documents Phase shall commence upon written directive from Princeton University and shall be considered complete for purposes of final payment for the Phase upon the approval by Princeton University of the Construction Documents.

(2) **General.** Based upon the approved Design Development Documents, incorporating Princeton University's review comments and any further adjustments in the scope or quality of the Project, or in the construction budget authorized by Princeton University, prepare Construction Documents setting forth in detail all construction requirements for the Project, including code review and analysis as necessary. The Construction Documents shall, as a minimum, consist of drawings, and a project manual, and shall be subject to Princeton University's approval.

(3) **Drawings.** Drawings shall document the scope of work and details for the project, and shall be coordinated both internally, with the Consultants, and with the specifications. Construction Documents shall, in accordance with the Standard of Care set forth in Article VI(a), be in compliance with those codes, ordinances, statutes, regulations and laws applicable to the Architect-Engineer's Services, except to the extent expressly and specifically stated in detail in writing by Architect-Engineer at the time of such submission.

(4) **Project Manual.** The Project Manual shall include:

(i) General requirements as embodied in Princeton University's standard documents, as may be modified by the Architect-Engineer, subject to Princeton University's approval, to reflect the specific conditions and requirements of the Project.

(ii) Technical Specifications prepared by the Architect-Engineer and the Architect-Engineer's Consultants.

(5) **Presentations.** Present the Construction Documents to Princeton University, and respond to questions. Documents shall be presented in a format acceptable to Princeton University.

(6) **Princeton University's Comments.** Record, evaluate, and respond to Princeton University's comments based on the review of 50% and 85% Construction Documents. Modify the Construction Documents to correct deficiencies and incorporate Princeton University comments. Identify any Princeton University-requested design revisions, which require additional services.

(7) **Approvals.** Assist Princeton University in connection with Princeton University's responsibility for filing documents required for the approval of governmental authorities having jurisdiction over the project. Revise documents as necessary to obtain approval from authorities having jurisdiction.

(8) **Updated Statement of Construction Cost.** When Construction Documents are 50% complete, update the Statement of Construction Cost for the Project, taking into account:

(i) Changes in materials, systems, or details of construction, which have occurred during preparation of the Construction Documents;

(ii) Known changes in the cost of materials, labor or services since the previous Statement of Construction.

(iii) Adjustments for known or anticipated changes in the bidding market relative to the Project.

(9) **Review of Statement of Construction Cost--Redesign.** Princeton University, the Architect-Engineer and the Contractor shall meet to review and discuss the scope of work and the corresponding Statement of Construction Cost (and to reconcile any differences between the Statements of Construction Cost pursuant to Article VI(c)(3), if the Architect-Engineer has retained a cost estimating Consultant). In the event that the Contractor's Statement of Construction Cost (or the reconciled Statement of Construction Cost, if the Architect-Engineer has retained a cost estimating Consultant) is greater than the Construction Budget, the Architect-Engineer shall in accordance with Article VI(c), if requested by Princeton University, as part of Basic Services and at no additional cost to Princeton University, redesign the Project and, after consultation with Princeton University and the Contractor, revise the Construction Documents on the basis of which such Statement of Construction Cost was prepared, until Contractor (and the Architect-Engineer's cost Consultant, if any) are able to issue a revised Statement of Construction Cost that does not exceed the Construction Budget.

(g) **Bidding or Negotiation Phase Services.** The Architect-Engineer shall provide the following bidding or negotiation phase services:

(1) **Commencement and Completion.** The Bidding or Negotiation Phase shall commence upon written directive from Princeton University and shall be considered complete for purposes of final payment for the Phase upon the approval by Princeton University contract for construction.

(2) **Pre-Qualification of Contractors.** As necessary, advise and assist Princeton University in evaluating submissions by contractors seeking to be pre-qualified for the work of the project.

(3) **Solicitation Documents.** Princeton University is responsible for organizing and coordinating the solicitation documents.

(4) **Invitation to Bid.** As necessary, assist Princeton University in establishing the list of bidders. Princeton University is responsible for issuing all solicitations.

(5) **Pre-Bid Conference and Walk Through.** As necessary, participate in the pre-bid conference and walk-through. Provide assistance to Princeton University in responding to questions from bidders. All questions and responses shall be recorded and forwarded to Princeton University for distribution.

(6) **Addenda.** As necessary, assist Princeton University in reviewing questions proposed by Bidders prior to receipt of Bids, and make recommendations. Prepare and submit to Princeton University for distribution to Bidders, addenda information as may be required during bidding. All addenda will be issued by Princeton University.

(7) **Evaluation of Bids.** If requested by Princeton University, participate in reviews of bids, and make recommendations on award of contract(s).

(8) **Substitutions.** The Architect-Engineer shall, during both the bidding or negotiation phase, if applicable, and the construction phase, review and respond to requests for substitution submitted by bidders or contractors. Architect-Engineer shall provide its response within five (5) business days or as otherwise agreed to by Princeton University.

(9) **Redesign.** If the lowest bona fide bid or negotiated proposal exceeds the Construction Budget, Princeton University shall, at its option:

- give written approval of an increase in the Construction Budget;
- authorize rebidding or renegotiating of the Project within a reasonable amount of time;
- terminate this Contract in accordance with Article XV; or
- cooperate in revising the Project design to reduce the lowest bona fide bid or negotiated proposal.

If Princeton University requests that the Architect-Engineer redesign the Project, the Architect-Engineer, as part of Basic Services and without additional compensation, shall modify the Construction Documents for which the Architect-Engineer is responsible under this Contract as necessary to comply with the Construction Budget. However, if the Contractor's Statement of Construction Cost (or the reconciled Statement of Construction Cost where the Architect-Engineer has retained a cost consultant) is greater than the Construction Budget due solely to Contractor's estimating errors, lack of reasonable efforts to maximize subcontractor competition, or other reasons within the control of the Contractor, then any redesign services performed by the Architect-Engineer shall be considered an Additional Service.

(h) **Construction Phase Services – Administration of the Construction Contract.** The Architect-Engineer shall provide the following services during the construction phase of the project:

(1) **Commencement and Completion.** The Construction Phase shall commence upon written directive from Princeton University and shall be considered complete for purposes of final payment for the Phase upon Substantial Completion of the Project.

(2) **Administration.** The Architect-Engineer shall administer the contract between Princeton University and the Contractor, in accordance with the Construction Documents.

(3) **Interpretation of Documents.** The Architect-Engineer shall respond to the Contractor's requests for information (RFI) and issue sketches and supplemental instructions as required. Response time shall be agreed to between the Contractor and the Architect-Engineer, but shall not result in construction delays.

(4) **Changes to Construction Documents.** Architect-Engineer shall make changes to the Construction Documents during the Construction Phase, as follows:

- (i) **General.** As part of Basic Services and subject to the limitations set forth in Article VII(c), the Architect-Engineer will review a reasonable number of proposed changes to the Construction Documents with Princeton University and the Contractor, and provide Princeton University with an analysis detailing any impact upon the design, any effect on compliance with laws or industry standards, and any reasons which, in Architect-Engineer's professional opinion, may exist for rejecting or modifying the proposed change. Architect-Engineer shall also review the Contractor's resulting written change proposal to determine that it clearly documents the scope and nature of the proposed change and that the costs or cost savings the Contractor has identified appear complete and appropriate. Architect-Engineer shall make a written recommendation to Princeton University respecting the proposed change and, if Princeton University elects to proceed with it, Architect-Engineer shall modify the Construction Documents as necessary to effect the change and assist Princeton University in reviewing the Contractor's change order. All such changes must be clearly defined and documented in the change order, pursuant to procedures reasonably requested by Princeton University. If Princeton University requests a change that is inconsistent with an approval previously given by Princeton University or if Architect-Engineer is asked to review an excessive amount of changes, Architect-Engineer's services in dealing with such changes, and Architect-Engineer's services in dealing with requests for substitutions, will be treated as Additional Services. Architect-Engineer shall give prompt written notice to Princeton University explaining the nature of such services and why such services need to be performed.
- (ii) **Due to Architect-Engineer's Error.** If the Construction Documents must be changed to correct Architect-Engineer's error, omission, or failure to coordinate the drawings and specifications comprising the Construction Documents, Architect-Engineer will make the change promptly upon becoming aware of the need for a correction, as part of its Basic Services, and at no additional cost to Princeton University. Architect-Engineer will work with Princeton University and the Contractor to minimize the impact of the resulting changes on the cost of the Project and the Construction Schedule.
- (iii) **Due to Contractors' Error.** If it becomes necessary or advisable to change the Construction Documents due to a Contractor's error or omission, Architect-Engineer will promptly discuss with Princeton University the proposed changes and their effect upon the Project cost and schedule and, upon receiving Princeton University's written approval, proceed to make the changes. Architect-Engineer will assist Princeton University in obtaining the Contractor's acknowledgment of responsibility for the change and its consequences, costs and, failing such agreement, will maintain documentation to assist Princeton University in pursuing its claims or other remedies against the Contractor for excess costs. Architect-Engineer's services in dealing with such errors or omissions will be treated as Additional Services. Architect-Engineer shall give prompt written notice to Princeton University explaining the nature of such services and why such services need to be performed.

(5) **Site Visits.** The Architect-Engineer shall visit the site at intervals appropriate to the stage of construction, but not less than an average of 1 (one) day(s) per week, to review the progress and quality of the work. The Architect-Engineer shall determine if, in general, the Work is being performed in a manner indicating that the Work will be in accordance with the Construction Documents when completed. The Architect-Engineer shall confirm that the Contractor is maintaining updated field record documents. The Architect-Engineer shall prepare a written summary of on-site observations and issues raised on each visit, keep Princeton University informed of the progress and quality of the Work, and shall endeavor to guard Princeton University against defects and deficiencies in the Work. However, the Architect-

Engineer shall not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect-Engineer shall immediately inform Princeton University in writing of any deviations from the Construction Documents, or any otherwise defective Work or improper procedures being carried out by the Contractor or its subcontractors. The Architect-Engineer shall neither have control or charge of, nor be responsible for, the construction manner, means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the construction contract.

(6) **Access to the Work.** The Architect-Engineer shall at all times have access to the Work wherever it is in preparation or progress.

(7) **Project Progress Meetings.** The Architect-Engineer and the Architect-Engineer's Consultants as required shall attend project progress meetings at two-week intervals, unless an alternate schedule is established by agreement of Princeton University, Architect-Engineer and Contractor.

(8) **Contractor's Application for Payment.** If requested by Princeton University, the Architect-Engineer shall, based on the Architect-Engineer's observations and evaluations of the Contractor's applications for payment, certify amounts due the Contractor and issue certificates of payment in such amount within seven days of receipt of Contractor's applications. The Architect-Engineer's certification for payment shall constitute a representation to Princeton University, based on the Architect-Engineer's observations at the site and on the Contractor's Application for Payment, that to the best of the Architect-Engineer's knowledge, information and belief the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to minor deviations from the Contract Documents correctable prior to completion and to specific qualifications expressed by the Architect-Engineer. The issuance of a Certificate of Payment shall further constitute a representation that Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment shall not be a representation that the Architect-Engineer has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by Princeton University to substantiate the Contractor's right to payment or (4) ascertained how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

(9) **Rejection of Work.** The Architect-Engineer shall notify Princeton University in writing when the Architect-Engineer determines that the Work does not conform to the Construction Documents so that Princeton University can reject the Work, at its option. Whenever the Architect-Engineer considers it necessary or advisable, to determine compliance with the intent of the Construction Documents, the Architect-Engineer shall recommend that Princeton University require additional inspection or testing of the Work, whether or not such Work is fabricated, installed or completed. However, such actions of the Architect-Engineer shall not give rise to a duty or responsibility of the Architect-Engineer to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees or other persons performing portions of the Work.

(10) **Submittals.** The Architect-Engineer shall review and/or approve the Contractor's submittals such as shop drawings, product data and samples. The Architect-Engineer's action shall be taken within ten (10) working days of receipt of first submissions and subsequent submittals, unless a shorter period is agreed to with respect to particular submittals. Review of such submittals is not conducted for the purpose of determining accuracy and completeness of other details such as dimensions and quantities or for substantiating instructions for installation or performance of equipment or systems by the Contractors, all of which remain the responsibility of the Contractor. The Architect-Engineer's review shall not constitute approval of safety precautions or programs, or of construction means, methods, techniques, sequences or procedures. The Architect-Engineer's approval of a specific item shall not indicate approval of an

assembly of which the item is a component. When professional certification of performance characteristics of materials, systems or equipment is required by the Construction Documents, the Architect-Engineer shall be entitled to rely upon such certification to establish that the material, systems or equipment will meet the performance criteria required by the Construction Documents. The shop drawing review process shall not be used by the Architect-Engineer to enhance or modify the design of the project.

(11) **Construction Changes.** After notification to, and the obtaining of approval from Princeton University, the Architect-Engineer may authorize minor changes in the Work which are consistent with the intent of the Construction Documents and which do not involve an adjustment in the contract sum or an extension of the contract time.

(12) **Substantial Completion.** The Architect-Engineer shall review and amend the Contractor's list of items to be completed or corrected, and conduct inspections to determine the date or dates of Substantial Completion for all portions of the Project. The Architect-Engineer shall issue a certificate of Substantial Completion which establishes the date of Substantial Completion, lists Work remaining to be completed and the time period for completion, and sets forth transitional and ongoing responsibilities of Princeton University and Contractor relative to utilities, security, repair of damage to the Work, etc.

(i) **Close-Out Services.**

(1) **Close-Out Submittals.** The Architect-Engineer shall receive, review for completeness, and forward to Princeton University written warranties, operation and maintenance manuals, and other documents required by the Construction Documents and assembled by the Contractor. In addition, the Architect-Engineer shall provide, through its Consultants if appropriate, a short written description of the mechanical and electrical systems and their operations, together with single-line diagrams as required, for use of maintenance and repair personnel. System descriptions and diagrams shall be coordinated with and cross-referenced to Contractor-furnished maintenance manuals.

(2) **Final Completion and Final Certificate of Payment.** Upon receiving the Contractor's final application for payment, and notice that the Work is complete, the Architect-Engineer shall conduct a final inspection to determine if the Work is complete and acceptable. The Architect-Engineer shall issue a final Certificate of Payment upon Contractor's compliance with all requirements of the Construction Documents.

(3) **Archive Drawings and Archive Specifications.** The Architect-Engineer and its Consultants shall prepare and submit Archive Drawings and Specifications as more fully set forth in Article XIV.

(4) **Warranty Inspection.** The Architect-Engineer shall provide services in conjunction with an inspection, approximately 10 months from date of Substantial Completion. Visual inspection shall be made with Princeton University and Contractor to determine whether correction of Work is required in accordance with provisions of the Construction Documents.

ARTICLE VIII - ADDITIONAL SERVICES BY ARCHITECT-ENGINEER

(a) **Additional Services.** Additional Services are defined as changes authorized by Princeton that increase the scope of the project or the Basic Services established in this Contract and that are subject to additional compensation in accordance with Article IX(c). The services specifically listed below are not included in the Basic Services described in this Contract and shall be considered to be "Additional Services". Additional Services shall be performed only if specifically authorized in advance by Princeton University in writing. Additional Services performed prior to the written authorization of Princeton University shall not be compensated as an Additional Service under the Contract. Upon the request or authorization by Princeton University to perform Additional Services and/or before performing any Additional Services, the Architect-Engineer shall provide to Princeton University a detailed cost proposal to perform the services in accordance with Article IX(c).

(1) **Special Field Investigation Services.** The following special field investigation services are beyond the scope of Services anticipated by this Contract. As needed for the Project, and approved or requested by Princeton University, these services shall be performed by the Architect-Engineer as an Additional Service on a lump sum basis:

- Provide a detailed inventory of Princeton University's existing furniture and equipment.
- As specifically requested and authorized by Princeton University, prepare measured existing conditions floor plans of portions of buildings.
- Prepare measured drawings to document the location size of existing mechanical, electrical, or other systems for Princeton University.
- Conduct a detailed investigation of the condition of architectural, mechanical, electrical, and other building systems outside the scope of the current Project, but required to integrate the Project into existing building systems.

(2) **Document Revisions During Construction.** Preparing drawings, specifications and supporting data in connection with Change Orders when the Change Order is necessitated by an act or omission of the Contractor pursuant to Article VII(f)(4)(i) or for Princeton University requested changes.

(3) **Replacement of Work.** Providing consultation concerning replacement of any Work damaged by fire or other cause during construction, and furnishing services as may be required in connection with the replacement of such Work.

(4) **Failure or Default of Contractor.** Providing services made necessary by the failure of performance, termination, or default of the Contractor, by major defects or deficiencies in the work of any Contractor; or by failure of performance of either Princeton University or any Contractor under the construction contract. However, under no circumstances will the Architect-Engineer be entitled to receive additional compensation for services made necessary by the errors, omissions, or failure of performance of the Architect-Engineer and/or its Consultants.

(5) **Post Final Completion.** Providing services, other than the 10-month warranty inspection, after issuance to Princeton University of the final Project Certificate for Payment, provided that the Architect-Engineer's closeout phase obligations have been fully completed. In the absence of a final Project Certificate for Payment, providing Services required to extend the close-out period more than sixty days after the Date of Substantial Completion of the Work, except when the Architect-Engineer is the cause of such extension. An extension of the close-out period beyond sixty days does not entitle the Architect-Engineer to additional compensation for close-out services which are not affected by the time extension, such as review of required close-out submittals, or preparation of MEP systems descriptions, even though such services may occur during the extension.

(6) **Witness.** Preparing to serve or serving as a witness on Princeton University's behalf in connection with any legal proceeding following close-out, except with regard to claims allegedly arising out of the errors or omissions of the Architect-Engineer or its Consultants.

(7) **Site Plan Review.** Notwithstanding the provisions of Article VI, paragraph (h), assisting Princeton University in fulfilling the requirements of a major or minor site plan review, including preparation of documents in support of an application prepared by others, attendance and testimony at public hearings, and response to issues raised by board members or staff.

(8) **Other Additional Services.** Providing any other services not otherwise included in this Contract and not customarily furnished in accordance with generally accepted architectural practices, which are requested and authorized in advance by Princeton University as being an Additional Service.

(b) **Extra Services.** Extra Services which are not due to errors, omissions or failure of performance of the Architect-Engineer and/or its Consultants that may be necessary as a result of changes to the

project requirements that are otherwise within the scope of the Project, the Basic Services established in this Contract, or the Additional Services subsequently added to the Contract via Amendment shall not be treated as Additional Services; however, an adjustment to the NTE Price may be made in accordance with Article IX(c) depending on the nature and circumstances of the Extra Services.. Architect-Engineer shall notify Princeton University when a change will result in the incurrence of Extra Services for which additional compensation will be sought. Extra Services shall be performed only if specifically authorized in advance by Princeton University in writing. Extra Services performed without the written authorization of Princeton University may not be compensated under the Contract. Upon the request or authorization by Princeton University to perform Extra Services and/or before performing any Extra Services, the Architect-Engineer shall provide to Princeton University a detailed cost proposal in accordance with Article IX(c) that both justifies the incurrence of and details the costs to perform the Extra Services.

(1) Changes, updates, delays to the project or construction schedule may result in an adjustment to the NTE Price provided the services were, in fact, Extra Services that would not have otherwise been performed but for such increase in the Project time. Basic Services which are simply performed at a later time, but which would have been required had there been no increase in the project time, may not be reimbursed as Extra or Additional Services.

(2) Changes to the Construction Budget by Princeton University that result in the performance of additional cost estimates or redesign efforts on the part of the Architect-Engineer and/or its Consultants may result in an adjustment to the NTE Price provided the services were, in fact, Extra Services that would not have otherwise been performed but for the change to the budget.

(3) The Architect-Engineer may be compensated for services provided or costs incurred as a result of or during a suspension of work made by Princeton University in accordance with Article XVI without regard to the duration of the suspension. Extra Services requested by Princeton University such as those for preparation of additional or alternate cost estimates, preparation of alternate designs, or for redesign/rework or the incurrence of costs related to demobilization/remobilization of staff by the Architect-Engineer and/or its Consultants may be reimbursed as Extra Services provided that the Architect-Engineer substantiates that the services performed and/or costs incurred resulted directly from and would not have otherwise been performed/incurred but for the suspension of work.

(c) Notwithstanding anything to the contrary expressed elsewhere in this Contract, Architect-Engineer shall not be compensated under the Contract for any Extra or Additional Services –

- made necessary, in whole or in part, by any fault or omission of the Architect-Engineer to perform its duties, responsibilities or obligations under this Contract.
- for cost overruns or other costs incurred in excess of the Fixed Fee or other NTE Amounts set forth in Article IX by the Architect-Engineer or any of its Consultants not stemming from any change or direction made by Princeton University.
- unless the circumstances giving rise to any claim for additional compensation necessitate the preparation of additional sketches, drawings, or other documents, or the making of substantial changes in any document which has already been approved by Princeton University or upon which substantial work has already been performed by the Architect-Engineer.

(d) If at any time during the term of this Contract Princeton University should request the Architect-Engineer to reduce the scope of services originally agreed upon under this Contract, the Architect-Engineer shall then reduce said scope of services, as requested, and his fee shall be reduced by a fair and equitable amount.

(e) If Princeton University requests that the Architect-Engineer perform services that the Architect-Engineer believes to be Additional or Extra Services as defined in this Article, the Architect-Engineer shall promptly inform Princeton University in writing and shall provide a fixed price (lump sum) or not-to-exceed cost estimate to Princeton University to provide such services. Architect-Engineer shall not proceed with the Additional or Extra Services until it receives an express written authorization executed by Princeton

University. However, if Princeton University, in the exercise of its reasonable judgment, concludes that the services in question are Basic Services and directs the Architect-Engineer to proceed on this basis, the Architect-Engineer shall proceed without delay. Failure to so proceed shall constitute a material breach of this Contract; however, by so proceeding, the Architect-Engineer does not waive any claim that it may have related to such services.

ARTICLE IX – COMPENSATION

(a) **Basic Services Compensation.** The Architect-Engineer agrees to perform all of the services described in Articles VI and VII for the NTE Price of **\$15,498,080 (Fifteen Million Four Hundred Ninety-Eight Thousand Eighty Dollars)** which is comprised of the Fixed Fee, the Specialized Consultants NTE Amount, and the Reimbursable Expenses NTE Amount. The NTE Price is the maximum compensation Architect-Engineer will receive for Basic Services unless otherwise agreed in writing by Princeton University.

(1) **Fixed Fee.** In full compensation for the Architect-Engineer's Basic Services, including without limitation, full compensation for all Basic Consultants (but excluding compensation for Specialized Consultants and excluding compensation for Reimbursable Expenses), Princeton University shall pay to Architect-Engineer the Fixed Fee of **\$14,918,010.00** which is allocated as follows:

Program Verification (2%)	\$293,160.00
Schematic Design (SD) Phase (12%)	\$1,758,961.00
Design Development (DD) Phase (19%)	\$2,785,022.00
Construction Documents (CD) Phase (34%)	\$4,983,724.00
Bidding or Negotiation (BN) Phase (2%)	\$293,160.00
Construction Administration (CA)/Close-Out (CO) Phase (31%)	\$4,543,983.00
Comprehensive Archive Drawings & Specifications (See Article XIV)	\$260,000.00

Incremental Funding via Phase. Princeton University will incrementally encumber funds for the Fixed Fee using the Phase allocations specified above as authorizations to proceed with the Phases are granted. Currently, authorization has been granted to proceed through the DD Phase. Therefore, total funding in the amount of **\$4,837,143.00 is encumbered to cover Basic Services through the DD Phase.** This amount consists of \$1,845,244.00 previously encumbered under Letter Contract FC0003914W plus an additional \$2,991,899.00 encumbered by this Superseding Contract.

(2) **Specialized Consultant NTE Amount.** In full compensation for Basic Services performed by Specialized Consultants, Princeton University shall pay to Architect-Engineer the actual fees invoiced by Specialized Consultants to the Architect-Engineer, which for each Specialized Consultant shall not exceed the amounts set forth below which include a mark-up of 0% for Architect-Engineer's administrative costs associated therewith, and which in the aggregate shall not exceed the Specialized Consultant NTE Amount of **\$0.00**.

<u>Specialized Consultant</u>	<u>NTE Amount</u>
None	\$0.00

(3) **Reimbursable Expenses NTE Amount.** As full compensation for Architect-Engineer's Reimbursable Expenses, Princeton University shall pay to Architect-Engineer the actual expenses incurred by Architect-Engineer and its Consultants that are allowable in accordance with the guidelines set forth in paragraph (b) below. Expenses shall be reimbursed at cost and with no markup and, in the aggregate shall not exceed the total not-to-exceed amount of **\$580,070.00** which is allocated by phase as follows:

Program Verification (2%)	\$11,601.00
Schematic Design (SD) Phase (12%)	\$69,609.00

Design Development (DD) Phase (19%)	\$110,213.00
Construction Documents (CD) Phase (34%)	\$197,224.00
Bidding or Negotiation (BN) Phase (2%)	\$11,601.00
Construction Administration (CA)/Close-Out (CO) Phase (31%)	\$179,822.00
TOTAL Reimbursable Expenses	\$580,070.00

Incremental Funding via Phase. Princeton University will incrementally encumber funds for Reimbursable Expenses using the Phase allocations specified above as authorizations to proceed with the Phases as granted. Currently, authorization has been granted to proceed through the DD Phase. Therefore, total funding in the amount of **\$191,423.00 is encumbered to cover Reimbursable Expenses through the DD Phase.** This amount consists of \$129,167.00 previously encumbered under Letter Contract FC0003914W plus an additional \$62,256.00 encumbered by this Superseding Contract.

If at any time the Architect-Engineer has reason to believe that the expenses to be incurred for Reimbursable Expenses in performing this Contract in the next succeeding thirty (30) days, if added to all other payments and costs previously accrued, will exceed eighty-five percent (85%) of the funded not-to-exceed amount for Reimbursable Expenses, the Architect-Engineer shall notify Princeton University giving a revised estimate of total Reimbursable Expenses along with supporting reasons and documentation.

(b) **Reimbursable Expenses.** The Architect-Engineer will be reimbursed for actual expenses in accordance with the guidelines listed below. These guidelines shall apply to all expenses incurred specifically for the project for which reimbursement is sought under this Contract whether incurred directly by the Architect-Engineer or by its Consultants. Only direct costs that are wholly attributable to the project shall be allowed. Indirect, prorated, proportional or other shared or estimated expenses shall not be allowed as reimbursable expenses. Deviations from these guidelines shall be allowable only with prior written approval from Princeton University.

(1) Expenses for transportation and living when traveling in connection with the project as approved by Princeton University are allowable subject to the following constraints:

- (i) Transportation and living expenses for travel within a forty (40) mile radius of Princeton University shall not be allowable.
- (ii) "First Class" expenses shall not be allowable. Examples of "First Class" expenses include limousines, chauffeured cars, luxury car rentals, private jets, first class airfare, business class airfare on domestic flights, and any other form of luxury travel. Expenses for the following forms of transportation are considered allowable: public transportation, economy/standard car rental, coach/economy airfare, business class airfare on international flights, and other reasonable forms of transportation.
- (iii) Mileage reimbursement for use of personal vehicles shall be allowable at the standard mileage rate for business set by the IRS at the time of travel.
- (iv) Allowable points of travel shall be between Princeton University and the Architect-Engineer's office location(s). If Princeton University is the first or last stop of the day, travel between the University and an employee's home shall be allowable. Travel to Consultants' office locations on behalf of Princeton University shall be allowable when this project is clearly identified as the sole purpose of the meeting. An agenda for the meeting shall be submitted with the invoice for reimbursement. Travel between an employee's home and normal office location shall not be allowable.
- (v) Meals. Those meals purchased while travelling to or working at Princeton University during normal business hours (typically lunch) shall be allowable. Meals, beverages, or snacks purchased in the Architect-Engineer's home city

while not travelling to or from Princeton University shall not be allowable. Reimbursement for alcoholic beverages is not permitted.

(vi) Hotels. When required, accommodations at the standard single room rate shall be allowable. In-room charges such as movies, mini-bar, water, and snacks shall not be allowable.

(2) Expenses for production or reproduction of drawings, specifications, calculations, cost estimates, program analyses, photographs, renderings, plottings, shop drawings, or similar instruments required as described in Articles VI and VII.

(3) Expenses for printing or copying Construction Documents in quantities suitable for bidding, provided the cost is obtained by competitive pricing of outside services.

(4) Expenses for postage, parcel delivery services (UPS or similar carriers), long distance telephone calls, facsimile (fax) transmissions, special deliveries, and couriers or other hired delivery services.

(5) Expenses for fees paid for securing approval of governmental review agencies and authorities if approved in advance by Princeton University. Reproduction expenses for the initial sets of drawings, specifications, calculations and reports for submittal to such agencies (i.e., the Division of Community Affairs, designated plan checking firm, etc) for plan checking shall be reimbursable.

(c) **Additional or Extra Services.** Adjustments to the NTE Price for the performance of Extra Services or additional compensation for Additional Services as defined in Article VIII, will be incorporated by Princeton by a written Amendment to the Contract. Architect-Engineer and Princeton University will negotiate either a maximum (NTE) fee to be reimbursed based on the Hourly Billing Rates set forth below, or, if the scope of the Extra or Additional services can reasonably be determined in advance, a fixed fee (lump sum) amount.

(d) **Hourly Billing Rates.** The following rates apply to this Contract, shall remain fixed for the entire duration of this Contract:

Individual/Labor Category	Hourly Rate
Tod Williams, Architectural Principal-In-Charge	\$325.00
Billie Tsien, Architectural Principal-In-Charge	\$325.00
Philip Ryan, Architectural Senior Associate	\$210.00
Jonathan Reo, Architectural Project Manager	\$160.00
Evan Ripley, Architectural Project Architect	\$140.00
Architectural Project Staff	\$115.00
MEP Principal	\$340.00
MEP Associate Principal	\$240.00
MEP Associate	\$200.00
MEP Senior Engineer	\$160.00
MEP Engineer	\$100.00
MEP Senior Drafter	\$130.00
MEP Drafter	\$100.00
MEP Clerical	\$100.00
Ed Messina, Structural Principal	\$290.00
Brian Falconer, Structural Principal	\$290.00
Structural Associate Principal	\$250.00
Structural Associate	\$210.00
Structural Senior Engineer	\$190.00

Individual/Labor Category	Hourly Rate
Structural Engineer	\$170.00
Structural Draftsmen/CADD Operator	\$130.00

ARTICLE X – PAYMENTS

(a) All amounts invoiced and paid under this Contract shall be in U.S. Dollars (\$) and are not subject to currency fluctuation.

(b) Architect-Engineer shall prepare and submit monthly invoices for payments under this Contract. Invoices shall be typed or computer-generated, shall include the Architect-Engineer's name and payment/remittance address, and shall cite Princeton University Contract Number FC0003914W and Project Grant number 078-2055. The Architect-Engineer shall direct invoices to the attention of Princeton University Contract Administrator at the following address:

PRINCETON UNIVERSITY
 Facilities Contract Administration Office
 E.A. MacMillan Building Annex
 Princeton, New Jersey 08544
 ATTN: Sharon R. Warkala

(c) Monthly invoices shall include amounts for Basic and Additional Services Compensation per Article IX in accordance with the following:

(1) **Fixed Fee.** Monthly invoices shall include a proportion of the Fixed Fee amount set forth in Article IX(a)(1) based on the percentage of completion of the Schematic Design, Design Development, Construction Documents, Bidding or Negotiation, and Close Out Phases during the billing month. For Construction Phase services, the Architect-Engineer shall submit monthly invoices for equal monthly payments based on the anticipated construction period (from award of the contraction contract to Substantial Completion). If an alternate payment schedule is incorporated into this Contract, monthly invoices shall include amounts per the payment schedule. In no event will amounts be paid that are in excess of the corresponding Fixed Fee amount established for each Phase as set forth in Article IX(a)(1).

(2) **Specialized Consultant Fees.** With each monthly invoice, Architect-Engineer shall submit copies of all Specialized Consultant invoices for which payment is being requested. The Architect-Engineer shall examine the invoices of its Specialized Consultants to confirm that all claimed fees and expenses are allowed under this Contract and shall not include ineligible amounts in its invoices to Princeton University. In no event will amounts be paid that are in excess of the corresponding NTE Amount established for that Specialized Consultant as set forth in Article IX(a)(2).

(3) **Reimbursable Expenses.** Architect-Engineer shall include actual amounts incurred during the billing month for Reimbursable Expenses and shall submit receipts, expense reports, and other detailed documentation to substantiate each item of allowable reimbursable expense included on the invoice. Princeton University reserves the right to deduct amounts that are determined to be unallowable in accordance with Article IX(b). In no event will amounts be paid that are in excess of the total Reimbursable Expenses NTE Amount as set forth in Article IX(a)(3).

(4) **Additional Services.** Architect-Engineer shall separately account and invoice for additional services authorized under this Contract pursuant to Article IX(c). For additional services authorized to be performed on an hourly basis, Architect-Engineer shall include actual amounts incurred during the billing month and shall submit detailed backup to support and substantiate the amount being billed, including copies of employee-signed and supervisor-approved time sheets. For additional services for which a fixed fee has been established, Architect-Engineer shall bill as for Fixed Fee as described in paragraph (1) above. In no event will amounts be paid that are in excess of any maximum or fixed fee established for the additional services or that are based on hourly rates that are not in accordance with the hourly rate schedule established in Article IX(d).

(5) In addition to the monthly amounts billed in accordance with the above, invoices shall show the corresponding total amounts as authorized by the Contract and the corresponding cumulative amounts billed to date.

(d) Payments will be made to the Architect-Engineer within 30 days after receipt by the Princeton University Contract Administrator of each invoice that is submitted in proper form and substance. Release of payments will be conditioned upon review and approval of the invoice by Princeton University's Administrative and Technical Representatives designated in Article III(b).

(e) Records. The Architect-Engineer shall maintain records for all reimbursable expenses and for services performed on an hourly basis in accordance with generally accepted accounting principles. Such records shall be made available to Princeton University or its authorized representative upon reasonable advance written request at mutually convenient times. The Architect-Engineer shall retain all records relating to this Contract until the expiration of seven (7) years after final payment is made under this Contract, or six (6) months after final resolution (by non-appealable judgment or settlement) of any disputes, whichever may be later.

(f) The Architect-Engineer shall permit Princeton University, at its own expense, by its duly authorized representatives, to inspect and audit all data, records and files pertaining to this Contract.

ARTICLE XI - TIME OF PERFORMANCE

Time is of the essence for this Contract. The Architect-Engineer shall perform its Services under the Contract in accordance with the Milestone Design Schedule set forth below and the Design and Construction Schedules as described in Article VI(c).

<u>Project Phase</u>	<u>Milestone Dates</u>
Schematic Design (SD) Phase	February 12, 2009 – December 25, 2009
SD Drawings Complete	October 23, 2009
SD Complete/Approval to Proceed to DD	January 22, 2010
Design Development Phase	March 8, 2010 – October 13, 2010
Construction Documents Phase	October 4, 2010 – September 14, 2011
50% Documents Complete	February 4, 2011
85% Documents Complete	June 17, 2011
100% Documents Complete	September 14, 2011
GMP Agreement	October 7, 2011
Bidding & Negotiation Phase	June 17, 2011 – November 4, 2011
Construction Phase	March 1, 2012 – February 27, 2015
Close-Out Phase	March 3, 2015 – March 2, 2016

ARTICLE XII - INSURANCE AND INDEMNIFICATION

(a) **Insurance.** Prior to beginning any of the Work on the Project or at the time of execution of this Contract, whichever occurs first, the Architect-Engineer shall establish, maintain and keep in force policies for minimum insurance coverage as set forth below:

- (1) **Workers Compensation (WC)** Statutory Minimum*
- (2) **Employer's Liability (EL)** \$500,000 Minimum*

***WC and EL are not required if Architect-Engineer is a solo independent contractor.**

- (3) **General Liability (GL):** Comprehensive General Liability including Contractual, Premises Operations, Products and Completed Operations, Independent Contractors/Vendors and Personal Injury, Bodily Injury and Property Damage.

Each Occurrence \$2,000,000 Minimum
Aggregate \$2,000,000 Minimum

(4) **Automobile Liability (AL):** Automobile Liability insurance is required only when use of a vehicle is integral to the performance of the contract or project.

Bodily Injury and Property Damage \$1,000,000 Minimum

(5) **Professional Liability (PL):** Architect-Engineers who are required to maintain professional licenses in order to practice in their profession shall maintain Professional Liability Insurance coverage as follows:

Per Claim \$2,000,000 Minimum
General Aggregate \$2,000,000 Minimum

(b) By requiring such minimum insurance, Princeton University shall not be deemed or construed to have assessed the risk that may be applicable to the Architect-Engineer for this Project or under this Contract. The Architect-Engineer shall assess its own risks and if deemed to be appropriate and/or prudent, should maintain higher limits and/or broader coverage than that stipulated above. The Architect-Engineer is not relieved of any liability or other obligations assumed or pursuant to the Contract by reason of its failure to obtain or maintain insurance in sufficient amounts, duration, or types.

(c) Insurance shall be provided at the Architect-Engineer's expense as part of the Fixed Fee or Hourly Expenses NTE Amount for Basic Services and shall not be charged directly to Princeton University as a Reimbursable Expense.

(d) Insurance policies required by this clause shall be written by a Carrier licensed to do business in the State of New Jersey with a Financial Strength Rating (FSR) of at least "A" and a Financial Size Category (FSC) of at least "VIII" in *A.M. Best's Key Rating Guide*.

(e) The Professional Services Contractor shall name "The Trustees of Princeton University, its Officers, Employees and Agents," as an additional insured on any General Liability (GL) policy or policies including any applicable Excess Liability policy or policies with respect to any liability resulting from or in any way connected with any services provided under this BOA, and said insurance coverage shall be primary as to any other valid and collectible insurance of Princeton University.

(f) The minimum insurance coverage shall be maintained for the entire duration of the Project. In the case of Professional Liability, "tail" coverage that continues for a period of three (3) years after substantial completion of the Project shall be provided. The Princeton University Contract Administrator shall be notified by the Architect-Engineer or its Insurance Carrier at least 30 days prior to any material change to or cancellation of any of insurance coverage.

(g) Prior to commencing any work on the Project or execution of this Contract, whichever occurs first, the Architect-Engineer or its Insurance Carrier shall provide a Certificate(s) of Insurance (COI) evidencing compliance with all requirements for insurance coverage as indicated in this Article. The COI shall be submitted to the Princeton University Contract Administrator at the address shown on page 1 of this Agreement for review and approval. For the duration of the contract, the Architect-Engineer or its Insurance Carrier shall provide updated COI's to evidence renewals or other changes to insurance policies or coverage. At the point of substantial completion of the Project, a COI shall be provided that evidences that the required Professional Liability "tail" coverage is in place and will remain in effect for a minimum of three (3) years following Project completion.

(h) **Indemnification -**

(1) To the fullest extent permitted by the laws of the State of New Jersey, and subject to subparagraph (2) below, the Architect-Engineer (the "Indemnitor" for purposes of interpreting this Paragraph) agrees to indemnify and hold harmless, and pay for the defense of Princeton University, its trustees, officers and employees, and any affiliated or related entities (the "Indemnitees" for purposes of interpreting this Paragraph) against all claims, loss, liability, damage, costs and expenses, including reasonable attorney's fees, that are alleged to have occurred in whole or in part arise as a result of, but only to the extent caused by and in proportion to, the negligent acts or omissions of the Indemnitor, its agents, consultants, employees, or representatives.

(2) **Equitable Adjustment.** In the event that acts, representations or omissions of an Indemnitee **materially** contributed to the nature or manner of performance or nonperformance by the Indemnitor, or its agents, consultants, employees, or representatives or nonperformance which gives rise to Indemnitor's liability under paragraph "1" above, the indemnity obligation shall be equitably adjusted to reflect said material contribution, with the Indemnitor retaining proportional liability for indemnification consistent with that equitable adjustment, **except** that Indemnitor may not avail itself of rights under this subparagraph "2" until it has provided the Indemnitees with reasonably timely notice, via a written statement, of Indemnitor's good faith factual basis for equitable adjustment, and proposed an adjustment based upon percentages, liability limits, or any other method of allocation that is appropriate under the circumstances.

(3) **Survival.** This indemnification obligation shall survive termination of this Agreement.

(4) **Hazardous Materials Indemnification.** To the fullest extent permitted by law, Princeton University shall hold harmless, defend, and indemnify Architect-Engineer from any and all claims, suits, demands, damages, losses, judgments, payments, awards, and expenses which directly or indirectly arise from or relate to hazardous materials as described in Article V(h) of this Contract.

(i) **Limitation of Liability.** In recognition of the relative risks and benefits of the Project to both Princeton University and Architect-Engineer and its Consultants, the risks have been allocated such that Princeton University agrees, to the fullest extent permitted by law, to limit the liability of Architect-Engineer to Princeton University for any and all claims, losses, costs, damages of any nature whatsoever or claims expenses from any cause or causes, including reasonable attorneys' fees and costs and expert-witness fees and costs, so that the total aggregate liability of Architect-Engineer to Princeton University shall not exceed the total compensation received by Architect-Engineer under this Contract or the available insurance proceeds from the Architect-Engineer's applicable liability insurance policy and those of its Consultants whichever is less. It is intended that this limitation apply to any and all liability or cause of action however alleged or arising, unless otherwise prohibited by law.

ARTICLE XIII – OWNERSHIP AND USE OF DOCUMENTS

(a) **Authorship and Copyright; Perpetual License to Use.** The original design documents, including drawings, specifications and other documents prepared by the Architect-Engineer for this Project are instruments of the Architect-Engineer's service. Unless otherwise provided, the Architect-Engineer shall be deemed the author of these documents and shall retain all common law, statutory and other reserved rights, including copyright; provided, however, the Architect-Engineer agrees to and does hereby grant, subject to Princeton University's payment of undisputed sums, Princeton University a perpetual royalty-free license to all such documents in which it may claim a copyright and to all architectural work as to which it may assert any rights or establish any claim under the design patent or copyright laws. Princeton University's perpetual royalty-free license shall entitle it to unlimited rights in all architectural works arising out of the Architect-Engineer's performance of services pursuant to this Contract, so long as its use thereof is consistent with Princeton University's purpose, as set forth in its Charter. This perpetual royalty-free license shall include, but not be limited to, drawings, specifications, architectural designs of buildings and structures, notes and other architectural and engineering documents produced by or on behalf of Architect-Engineer in the performance of this Contract, or in contemplation thereof, archive drawings and archive specifications produced after completion (including the right to use same for comprehensive campus-wide mapping endeavors), and any and all other "architectural works" as that term is defined in the Architectural Works Copyright Protection Act at 17 U.S.C. 102 (a)(8). Princeton University shall defend, indemnify and hold the Architect-Engineer harmless from and against all claims, losses, liabilities and damages arising out of Princeton University's use of documents pursuant to this perpetual royalty-free license for any purpose other than in connection with the Project which is the subject of this Contract.

(b) At any time upon demand by Princeton University, Architect-Engineer shall furnish to Princeton University as a Reimbursable Expense a complete set of all work product prepared by or obtained by the Architect-Engineer to date of such demand. In the event of Architect-Engineer's failure to comply with Princeton University's demand hereunder, the parties agree that any remedy at law would be inadequate

and entitle Princeton University to equitable relief including without limitation the remedy of specific performance.

(c) In the event that the Contract is terminated for Architect-Engineer's default pursuant to Article XV hereof, Architect-Engineer shall remain responsible for all signed and sealed construction documents prepared by Architect-Engineer or its Consultants, except to the extent that such documents are modified, misused or misinterpreted by Princeton University, or its contractors, or any replacement architect. In all other cases, reuse of the Architect-Engineer's design documents without written authorization by Architect-Engineer shall be at Princeton University's risk.

(d) The Architect-Engineer shall be permitted to reuse individual elements of the design for the Project on other projects; provided, however, that the Architect-Engineer shall not substantially reproduce the design of this Project on any other project without Princeton University's prior written approval.

(e) Notwithstanding paragraph (a), renderings, presentation models, and mock-ups shall become property of Princeton University.

ARTICLE XIV – ARCHIVE DRAWINGS AND SPECIFICATIONS

(a) As part of its Basic Services, the Architect-Engineer shall comply with the archiving requirements set forth in Section 1.5 - Documentation and Archiving of the Princeton University Facilities Department Design Standards Manual and shall furnish to Princeton University Record Drawings and Specifications in the formats prescribed therein.

(b) Comprehensive Archive Drawings and Specifications Services are are not included within the scope of Basic Services under this Contract. When these services are included in the scope of work for this Contract, the Architect-Engineer shall reconcile the Record Drawings and Specifications deliverable pursuant to this Article XIV with the Contractor's As-Built Drawings and deliver a set of Comprehensive Archive Drawings and Specifications for Princeton University's archive in the formats prescribed in Section 1.5 of the Princeton University Design Standards Manual. This is an optional service that Princeton University may choose to invoke at the time of contract award or any time thereafter prior to the date of Substantial Completion for the project at a fixed fee of **\$260,000.00**. If this option is invoked at the time of contract award, this amount will be included in the Fixed Fee set forth in Article IX(a)(1). If this option is invoked any time after award of the contract, these services will be added as Additional Services in accordance with Article IX(c) at this fixed fee amount.

ARTICLE XV – TERMINATION

(a) **Termination of Contract for Architect-Engineer's Default.**

(1) **Grounds.** If Architect-Engineer fails to perform any of its material duties under the Contract in a timely fashion, for reasons not due to the fault of Princeton University, Contractor or any subcontractor, or otherwise materially breaches the Contract in any way, Princeton University may terminate the Contract for default. Without limitation, termination for default will be permitted if Architect-Engineer fails to promptly correct any errors, omissions or other deficiencies in documents prepared by Architect-Engineer upon receiving notice of them from Princeton University or otherwise becoming aware of them; fails to adhere to agreed schedules or to perform in a timely fashion; fails to continue its performance during the pendency of a dispute, as required by the Contract; becomes insolvent, makes an assignment for the benefit of creditors, files a voluntary petition in bankruptcy or insolvency or has an involuntary petition in bankruptcy or insolvency filed against it, or has a receiver appointed; files for dissolution or otherwise is dissolved; or if Princeton University shall have reasonable grounds to believe that Architect-Engineer does not have the technical or financial ability to complete its obligations under the Contract and Architect-Engineer fails to give Princeton University prompt and reasonable assurances of its ability to perform.

(2) **Notice and Effective Date.** Princeton University shall notify Architect-Engineer, in writing, of a termination for default, and the reasons prompting it. Thereafter, Architect-Engineer shall have ten (10) days to cure such default ("Cure Period"), or a reasonable period of time if it is

practically impossible to cure such default within ten days provided that Architect-Engineer gives Princeton University reasonable assurances that a satisfactory cure will be effectuated within such reasonable time. Should the default not be cured, nor reasonable assurances given that the default will be cured within a reasonable time, the termination shall take effect, without further notice, on the date specified in the notice. However, the termination will not take effect if, before the termination's effective date, Princeton University delivers to Architect-Engineer a written revocation of the termination.

(3) **Termination Remedy Cumulative.** The remedy of termination is not exclusive, but is in addition to all other rights or remedies Princeton University may have in law or equity for any breach of contract by Architect-Engineer. Neither termination of the Contract nor any payment to Architect-Engineer shall limit or impair the right of Princeton University to recover damages occasioned by the fault or default of Architect-Engineer.

(4) **Effect of Wrongful Termination Under This Section.** If any termination for default is later determined to have been improperly effected Architect-Engineer shall be entitled to receive, as its sole remedy, the costs or damages described in paragraph (b) hereof.

(b) **Termination For Convenience.** Princeton University may terminate the Contract, without declaring Architect-Engineer in default, with or without cause, by providing Architect-Engineer with thirty (30) calendar days' written notice of termination at any time.

(1) If the Architect-Engineer is a sole proprietor and the Architect-Engineer should die during the term of this Contract, this Contract shall be considered terminated. In the event of such termination, the Architect-Engineer's estate shall be entitled to reasonable payment for any uncompensated Services performed to the date of death, and Princeton University shall have title to and/or the right to immediate use and possession of all finished and unfinished documents prepared under this Contract, as if this Contract had been terminated for the convenience of Princeton University pursuant to this paragraph (b).

(c) **Deliverables and Compensation.** In the event of termination, Architect-Engineer shall promptly deliver to Princeton University all records, documents, working papers, calculations, computer programs, data, drawings, plans, specifications and other tangible work products and all equipment, materials, items or objects acquired by Princeton University and reimbursed by Princeton University, pertaining to the services performed under this Contract to the time of termination; provided that Princeton University has paid to Architect-Engineer all amounts due and owing as of the date of determination, exclusive of amounts disputed in good faith by Princeton University. In addition,

(1) If termination is under paragraph (a) for default, compensation will be paid only for services properly performed and actual expenses incurred through the date of termination less the amount of any asserted claims of Princeton University or any claims arising out of such termination, including without limitation claims attributable to any excess reprocurement costs incurred to complete the remaining obligations of Architect-Engineer under this Contract.

(2) If termination is under paragraph (b) for convenience, Architect-Engineer shall be paid a percentage of its Basic Services compensation corresponding to the value of the Services actually completed by Architect-Engineer as of the date of the termination, together with compensation for any approved Additional Services actually completed. The value of Basic Services completed shall be based upon the breakdown set forth in the Article IX. The payment of these amounts is Architect-Engineer's sole remedy for termination for convenience. In no event shall Architect-Engineer be entitled to recover any additional amounts after termination under this section, including, without limitation, profits or overhead on portions of the Services not performed as of the effective date of termination. Compensation shall in no case exceed the limits established in this Contract for each phase of the Services as to which Princeton University has expressly authorized Architect-Engineer to proceed, plus reasonable expenses arising from and limited to Architect-Engineer's demobilization of staff as a direct result of termination of this Contract.

(d) **Termination of Contract for Princeton University's Default.** If Princeton University fails to make payments to Architect-Engineer in accordance with this Contract, exclusive of payments disputed

by Princeton University in good faith, such failure shall be considered substantial nonperformance and cause for termination, or, at Architect-Engineer's option, cause for suspension of performance of services under this Contract. If Architect-Engineer elects to suspend services, prior to suspension of services, Architect-Engineer shall give seven (7) days' written notice to Princeton University. In the event of the suspension of services, Architect-Engineer shall have no liability to Princeton University for delay or damage caused Princeton University because of such suspension of services. Before resuming services, Architect-Engineer shall be paid all sums due, except amounts disputed by Princeton University in good faith, prior to suspension and any expenses incurred in the interruption and resumption of Architect-Engineer's services. Architect-Engineer's fee for the remaining services and the time schedules shall be equitably adjusted. If Architect-Engineer elects to terminate this Contract for nonpayment or other material breach of contract, the Architect-Engineer shall notify Princeton University, in writing, of the termination for default, and the reasons prompting it. Thereafter, Princeton University shall have ten (10) days to cure such default ("Cure Period"), or a reasonable period of time if it is practically impossible to cure such default within the ten (10) days provided that Princeton University gives Architect-Engineer reasonable assurances that a satisfactory cure will be effectuated within such reasonable time. Should the default not be cured, nor reasonable assurances given that the default will be cured within a reasonable time, the termination shall take effect, without further notice, on the date specified in the notice. However, the termination will not take effect if, before the termination's effective date, Architect-Engineer delivers to Princeton University a written revocation of the termination.

ARTICLE XVI – SUSPENSION

- (a) Princeton University, at any time, upon three (3) days written notice to the Architect-Engineer may suspend all of any part of the Services of the Architect-Engineer.
- (b) In the event of suspension by Princeton University as noted above, the Architect-Engineer shall be entitled to receive reasonable compensation for Services already satisfactorily performed and accepted, but no amount shall be allowed for anticipated profit on unperformed Services.
- (c) Notwithstanding any amounts for Extra Services agreed to by the Parties in accordance with Article VIII(b), should Princeton University reactivate any assigned work covered by this Contract, in whole or in part, within 180 days from the time the Services were suspended, any fees paid to the Architect-Engineer pursuant to this Contract shall be applied as payment on the fees for the Services as set forth in this Contract at this time of reactivation. Should reactivation occur after a period of suspension exceeding 180 days, the Architect-Engineer and Princeton University may renegotiate the fees based on current conditions or either may unilaterally elect to terminate the Contract as it pertains to the remaining Services.
- (d) In the event Princeton University decides to suspend any Services under this Contract, Princeton University shall remain entitled to unlimited access to all finished and unfinished documents prepared by the Architect-Engineer pursuant to this Contract and shall be vested with all rights to such documents as set forth in Article XIII.
- (e) If the Architect-Engineer should be unwilling or unable to perform the Services required by this Contract at the time Princeton University desires to reactivate the Services after a period of suspension, then Princeton University shall have title to and/or the right to immediately use and possess all finished and unfinished documents prepared under this Contract as if the Contract had been terminated pursuant to Article XV(b).

ARTICLE XVII - DISPUTE RESOLUTION

- (a) If a claim, controversy or dispute between Princeton University and Architect-Engineer arises concerning the interpretation of the Contract, the performance of any portion of Architect-Engineer's Services, or any other matter arising under or relating to this Contract, or the breach thereof, the parties shall promptly confer and exert their best efforts in good faith to reach a reasonable and equitable resolution of the issue.

(b) If the parties are unable to resolve the claim, controversy or dispute within a reasonable time, either party may initiate mediation administered by the American Arbitration Association under its Construction Industry Mediation Rules (online at www.adr.org), including, but not limited to, the provisions therein regarding confidentiality. The parties expressly agree that the mediator shall have the authority, in his or her discretion, to (i) engage in fact finding and/or analysis, and (ii) tailor or forgo mediation sessions anticipated by the Construction Industry Mediation Rules.

(c) For any claim, controversy or dispute not resolved through mediation under paragraph (b), either party may initiate litigation, provided that such litigation shall be brought exclusively in the United States District Court for the District of New Jersey or in the Superior Court of the State of New Jersey, Mercer County. The parties agree that any otherwise applicable statute of limitations applicable to claims raised in mediation shall be tolled from the date mediation is initiated until thirty days after the conclusion of mediation, as determined by the mediator. Completion of the mediation process is a condition precedent for either party to initiate litigation, except for litigation seeking a temporary restraining order and/or a preliminary injunction.

(d) Princeton University and Architect-Engineer agree that this dispute resolution process shall apply to all claims, controversies and disputes arising between them, including those involving other parties which have entered into agreements with Princeton University or Architect-Engineer containing provisions substantially similar to this paragraph. In the event of such a claim, controversy or dispute involving third parties bound by such provisions, the procedure set forth above shall be interpreted and applied so as to encompass all such parties to the dispute. The Architect-Engineer expressly agrees (i) to being joined in any mediation or litigation between Princeton University and one or more third parties giving rise to a claim by Princeton University against Architect-Engineer relating to the Project, and (ii) to the joinder of one or more third parties in any mediation or litigation between Princeton University and Architect-Engineer where such mediation or litigation gives rise to a claim by Princeton University against such third parties.

(e) Pending final resolution of any claim, controversy or dispute, (i) Architect-Engineer shall proceed diligently with the performance of its obligations under the Contract without interruptions or delay, and shall not directly or indirectly stop or delay its performance; and (ii) Princeton University shall make timely payment in accordance with the Contract of all undisputed amounts.

ARTICLE XVIII – MISCELLANEOUS

(a) **Delivery of Notice.** Notices required or permitted to be given to either party hereto shall be sufficient if delivered by first class mail, express delivery service, facsimile, electronic mail, or personal delivery to Princeton University addressed to the Contract Administrator or to Architect-Engineer addressed to the Principal in Charge at the addresses shown on Page 1 of this Contract or to such other address as either party may specify to the other by notice given as provided herein.

(b) **Rights and Remedies.** Princeton University's review, approval, acceptance or payment for Services under this Contract shall not operate as a waiver of any rights under this Contract and Architect-Engineer shall be and remain liable to Princeton University for all damages incurred by Princeton University as the result of Architect-Engineer's failure to perform in conformance with the terms and conditions of this Contract. The rights and remedies of Princeton University provided for under this Contract are in addition to any other rights or remedies provided by law.

(c) **No Third Party Beneficiaries.** The parties acknowledge that this Contract is not intended to create, and shall not be construed to create, third party beneficiary rights for or against any third party, except as expressly set forth herein.

(d) **Successors and Assigns.** Architect-Engineer shall not in whole or in part assign or transfer this Contract or delegate its duties without the prior written approval of Princeton University. Architect-Engineer for itself and Architect-Engineer's successors, Consultants, assigns, partners and legal representatives, binds them to Princeton University with respect to all covenants of this Contract. Princeton University for itself and its successors, assigns and legal representatives, binds them to Architect-Engineer with respect to all covenants of this Contract.

(e) **Execution.** The Contract may be signed in more than one identical counterpart, each of which shall be deemed to be an original hereof.

(f) **Limitation of Actions.** ~~The parties agree that any action by Architect-Engineer against Princeton University arising out of or relating to this Contract shall be commenced within one (1) year after Substantial Completion of the Project, any otherwise applicable statutory limitations period notwithstanding, except for actions for indemnity or contribution arising out of actions brought against Architect-Engineer by third parties. The parties further agree that any period of limitations on any claim of Princeton University against the Architect-Engineer shall in no event begin to run until the date of Substantial Completion of the Project or until the date on which Princeton University knew, or reasonably should have known, the basis for the claim against the Architect-Engineer, whichever occurs later.~~

(g) **Advertisement.** Architect-Engineer shall not issue or permit to be issued any advertisement, press release, or literature of any kind which refers to Princeton University or the services performed in connection with the Contract, unless it first obtains the written approval of Princeton University.

(h) **Severability.** Should any provision of this Contract be held unenforceable as a matter of law, the validity of the remaining provisions shall not be affected by such a holding, providing that the unenforceable provision was not a controlling or material inducement to the making of the Contract.

(i) **Modification.** The parties agree that this Contract may be modified from time to time only by means of written documents signed by both parties. In the normal course, any changes to the provisions of this Contract shall be made by way of an executed change order.

(j) **Waiver.** It is agreed that no waiver by either party of any breach by the other party of any of the provisions herein shall be deemed a waiver as to any prior, subsequent and/or similar breach, or any other breach whatsoever.

(k) **Applicable Law.** This Contract is deemed entered into in the state of New Jersey, and is to be construed under the laws of that state.

(l) **Applicable Currency.** The applicable currency for all price and other monetary terms in the Contract is U.S. Dollars. Payments under the Contract will be made in US Dollars unless otherwise specified in the Contract.

(m) **Licensed Architect-Engineer.** Architect-Engineer hereby warrants that for the duration of the Contract it shall be fully licensed and authorized to practice in New Jersey and to provide any other services required under the Contract.

(n) **Entire Contract.** This Contract represents the entire and integrated agreement between Princeton University and the Architect-Engineer and supersedes all prior negotiations, representations or agreements, either written or oral.

(o) Architect-Engineer and Princeton University waive consequential damages for claims, disputes, or other matters in question arising out of or relating to this Agreement. This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article XV.

CONTRACT NUMBER FC0003914W

PART I - AGREEMENT

IN WITNESS WHEREOF, the Parties hereto have executed this Contract:

WITNESS TO SIGNATURE ON BEHALF OF
PRINCETON UNIVERSITYBY: Sharon R WarkalaPRINTED: SHARON R WARKALA

THE TRUSTEES OF PRINCETON UNIVERSITY

BY: Mike McKayPRINTED: Mike McKayTITLE: Vice President for FacilitiesDATE: 4/1/10WITNESS TO SIGNATURE ON BEHALF OF
ARCHITECT-ENGINEERBY: BILLIE TSIENPRINTED: BILLIE TSIEN

ARCHITECT-ENGINEER

BY: Todd WilliamsPRINTED: Todd WilliamsTITLE: PARTNERDATE: April 1, 10

CUMULATIVE CONTRACT FUNDING SUMMARY

	078-2055 330	078-2055 331	078-2055 322	TOTALS
Letter Contract	\$1,845,244.00	\$129,167.00	\$0.00	\$1,974,411.00
Superseding Contract	\$2,991,899.00	\$62,256.00	\$0.00	\$3,054,155.00
TOTALS	\$4,837,143.00	\$191,423.00	\$0.00	\$5,028,566.00

CONTRACT NUMBER FC0003914W

DESIGN SERVICES FOR THE ANDLINGER CENTER FOR ENERGY & ENVIRONMENT

PART II – Project Description

The following document(s) attached hereto or incorporated by reference comprise the Project Description for this contract:

- Project Description for Architect-Engineer Design Services for the Andlinger Center for Energy and the Environment (ACEE) Project dated 10/20/2008 (Attached)
- Tod Williams Billie Tsien Architects Proposal dated November 17, 2008 submitted in response to RFP CAO-09-034W (Incorporated by Reference)

**PROJECT DESCRIPTION
FOR
ARCHITECT-ENGINEER DESIGN SERVICES FOR THE
ANDLINGER CENTER FOR ENERGY AND THE ENVIRONMENT (ACEE) PROJECT**

October 20, 2008

Value Proposition

Build state-of-art laboratories for research with applications in the areas of energy and the environment.

Create an environment that fosters accelerated innovation and the seamless interaction of theory, experiment, design, and manufacturing.

Develop space for visitors from industry and academia to collaborate with Princeton University faculty and students.

Create a premier forum for academic conferences and events on topics related to energy and the environment.

Project Background

As part of a major initiative to expand research and teaching in the areas of energy and the environment, Princeton University seeks to build new specialized laboratories that are crucial for advancing practical solutions in these areas. By developing the first new experimental research facilities in the School of Engineering and Applied Science since 1993, Princeton will greatly increase the effectiveness and impact of its distinguished research teams. The engineers and scientists already on the campus will be able to expand the horizons of their research by designing new experiments that take advantage of cutting-edge instrumentation and they will be able to attract new colleagues – from academia and industry – who will supply critical new perspectives to the research enterprise.

The new initiative will bring together faculty members from various departments and interdisciplinary centers, including Chemical Engineering, Electrical Engineering, Civil and Environmental Engineering, Mechanical & Aerospace Engineering and the Princeton Institute for Science and Technology of Materials, among others. Please see <http://www.princeton.edu> for detailed descriptions of the departments.

Existing Conditions Assessment

Princeton University will provide a site survey, site utility plan, and existing condition drawings for the project site. The Architect will be responsible for verifying all field conditions relating to any area or system to be renovated. New measured drawings will be required to depict accurately the conditions of these areas on the base plans. It is expected that any renovation or connection to existing mechanical, electrical or plumbing (MEP) infrastructure will be

completely analyzed to determine appropriate local points of connection and impact. Analysis of options including MEP alternatives will be conducted in conformance with Princeton standards.

Princeton University Campus Plan

In 2008, Princeton University completed a detailed campus plan, available online at <http://www.princeton.edu/campusplan/>. The plan identifies Five Guiding Principles:

- Maintain a pedestrian-oriented campus
- Preserve the park-like character of the campus
- Maintain campus neighborhoods while promoting a sense of community
- Build in an environmentally responsible manner
- Sustain strong community relations

The Campus Plan also serves as a planning framework for specific neighborhoods including the Prospect Avenue and William Street neighborhood, which includes the School of Engineering and Applied Science.

Design Principles

The Andlinger Center for Energy and Environment will support a vibrant and expanding program of research and teaching in the areas of sustainable energy development, energy conservation, and environmental protection and remediation. Working closely with scientists and policy analysts across the University, the Center will pursue these studies with an eye towards translating fundamental knowledge into practical solutions that will enable sustainable energy production and the protection of the environment from dangerous anthropogenic change. The Center will be located in a neighborhood within the Engineering School, in a new state-of-the-art research facility and in existing space. The new facility must embrace the principles of the 2008 Campus Plan and transform a site burdened with unsatisfactory campus planning conditions into one that achieves a standard of excellence consistent with the best Princeton campus traditions. The primary design goals include the following:

- Education: To create a facility that will attract, inspire and educate the current and future generations of leaders in the areas of energy and the environment.
- Research: To create a state-of-the-art shared-facility research building with materials for energy and the environment as a unifying theme, and to optimize synergies between the new facility and existing related academic and research units, such as the Department of Civil and Environmental Engineering, and the Mid-Infrared Technologies for Health and the Environment (MIRTHE) Engineering Research Center. Rooftop laboratory activities will be a distinctive aspect of the new building.
- Sustainability: To create a design that is fundamentally imbued with the ethos of sustainability. Through state-of-the-art instrumentation, the new facility and landscape should be a laboratory for the built environment.

- Identity: To create a distinctive, visible and identifiable center for research and teaching dedicated to translating fundamental knowledge into practical solutions that will enable sustainable energy production and the protection of the environment and engage occupants and visitors through exposure to research and innovation.
- Outreach: To create a premier forum for academic conferences and events on topics related to energy and the environment. To establish a vigorous program of industrial and academic visitors.
- Context: To embrace and transcend the challenging context presented by the existing E-Quad, Bowen Hall, and 87 Olden structures.
- Connectivity: To enhance the functionality and quality of connectivity between the E-Quad, Bowen Hall, and 87 Olden structures and to enhance the space efficiency of Bowen Hall.

Program

The School of Engineering and Applied Science has developed a detailed programming study. It is imperative that the new facilities support the specific scientific needs identified by the departments. The selected Architect is expected to develop a detailed work plan that supports the technical requirements for the project. The functional and space programs for the proposed facility are described in the attached *Andlinger Center for Energy and the Environment Programming Study completed by Davis Brody Bond Aedas dated October 17, 2008*. The following program summary is extracted from the attached Programming Study:

Space Description	Total ASF
Cleanroom Facility	27,883
Imaging Center	9,889
Research Laboratories	17,474
Teaching Laboratories	3,300
Faculty & Administrative Offices	3,150
Graduate Students	3,490
Building Support	2,240
Conference Center	5,870
Special Components	1,800
Total (nsf)	75,096

Sustainability

Princeton University has committed to reducing its carbon dioxide emissions to 1990 levels by 2020 as part of a comprehensive Sustainability Plan that sets ambitious goals in the areas of greenhouse gas emissions reduction, resource conservation, research education, and civic engagement.

Potential elements of the building and site sustainable design include:

- Energy efficient building envelope
- Energy recovery and optimization systems
- Building materials with low VOC emissions
- Thermal and lighting control systems
- Green roofs (when appropriate in context of a residential neighborhood)
- Permeable paving and biofiltration systems
- Energy recovery systems
- Storm water collection systems to reduce landscape irrigation requirements

Princeton University's Commitment to Sustainability is set forth below:

- a) Princeton University is strongly committed to the principles of sustainable evolution of the campus. To further that objective, Princeton has developed specific goals for campus design and operation of its facilities. These goals shall be applied to this project.
- b) These goals are to be met in conjunction with the Princeton University Design Standards Manual, Release 7.0 dated March 2008, and Section 1.2 Sustainable Building Guidelines. The Guidelines currently allow for establishing the goals for sustainability on a project-by-project basis.
- c) As an amendment to the Princeton University Design Standards Section 1.2 Sustainable Building Guidelines, during the sustainability charrette, the following shall be established for every project, as a starting point and further goals specific to each project are to be developed:
 - (i) New construction and renovations shall be designed to use 50% less energy than required by code.
 - (ii) All projects shall be designed in manner to allow at least a LEED Silver equivalency, should the University decide to submit the project for formal certification.
- d) These requirements will follow into the Life Cycle Comparative Study (LCCS) Workshop and Reviews, Construction and Best Practices Phases.

As part of the Princeton's Architect-Engineer selection process for this Project, your team will be required to present for Princeton's consideration and evaluation examples of demonstrated experience in delivering projects that have met or exceeded similar sustainability requirements and that employed leading edge sustainable design. For more information on the sustainability guidelines, see http://www.princeton.edu/facilities/design_construction.

Building Information Modeling

The selected Architect will implement a design and documentation process that is fully coordinated with all consultants. It is highly desired that the Architect will utilize three-

dimensional, real-time, dynamic building modeling software to increase productivity in building design and construction. The process is to produce a Building Information Model (BIM), which encompasses building geometry, spatial relationships, geographic information, and quantities and properties of the building components. It is anticipated that the Architect will work with Princeton University at the earliest inception of the project to establish an acceptable BIM standard for the project.

Schedule

The construction of the Andlinger Center must be complete no later than March 2014. The following represents Princeton's proposed milestone schedule for the majority of the work. Please note timing of the various zoning requirements shown and assumed to be parallel activities with other milestones listed below:

Activity	Completion Dates
Architect Selected	January 2009
Select CM	April 2009
Trustee Concept Approval	September 2009
Submit Concept to Municipality	September 2009
Submit Land Use Application	November 2009
Design 50% Complete	May 2010
Submit Concept to Municipality	September 2009
Concept Presentation	November 2009
Submit Land Use Application	December 2009
Site Plan Submission Deemed Complete (anticipated)	March 2010
SPRAB meeting (unconfirmed by the Municipality)	April 2010
PRPB final presentation (unconfirmed by the Municipality)	July 2010
Design 85% Complete	July 2010
Design 100%	August 2010
FPG Final Concept and Budget Approval	August 2010
Trustee Finance Committee Approval	September 2010
Meet Conditions of Land Use Approval	January 2011
Receive Building Permits	April 2011
Start Construction	March 2011
Finish Construction	March 2014

Construction Budget

Princeton University has identified a construction budget of \$102,000,000 for this work, expressed in 2008 dollars. Based on the Programming Study a further breakdown of the anticipated costs is listed below.

- Andlinger Center Construction- \$82,475,000
- Bowen Hall Renovation - \$15,625,000
- 86 Olden Renovation - \$3,900,000

Contracts

It is Princeton's intent to enter into a prime contract with the Architect who will in turn, enter into subcontracts with other basic and specialized sub-consultants necessary to perform all design services required for this Project, with the exception of the following services for which Princeton will contract separately and directly:

- Civil engineering work outside of the building will be contracted with Van Note-Harvey Associates, PC
- Landscape design work will be contracted with Michael Van Valkenburgh Associates, Inc.
- Building Commissioning services will be contracted with a Commissioning Agent (to be determined)

The Architect will be responsible for management, oversight, and coordination of all of its sub-consultants throughout all phases of the design services contract. In addition, the Architect will also be responsible for coordinating with the other firms contracted separately by Princeton, and for providing direction to and incorporating their work into the project design, engineering, and construction documents. It shall be at Princeton's discretion as to when sub-consultants are required to attend or participate in design review or construction phase meetings.

The Architect will be responsible for providing all design and engineering services for the building as well as coordinating with Princeton University Facilities Engineering. Other Princeton projects may be designed and constructed on adjacent parcels of land during the Andlinger Center Project. The Architect will be responsible for coordinating the design and engineering of the Andlinger Center Project in concert with these projects.

The scope of services shall include all items listed in Article VI- Architect Engineer's General Responsibilities and Article VII – Architect-Engineer's Basic Services as set forth in the Architect-Engineer Design Services Contract and shall include sustainability reviews at each design milestone.

Princeton will retain the services of a Construction Manager (CM) throughout the preconstruction/design process proposed for the project. A Preconstruction Services Contract will be issued to a CM that incorporates input from the design team. Preconstruction Services will include the preparation, submission, and finalization of a Guaranteed Maximum Price

(GMP) proposal. It is Princeton's intent to enter into a construction services contract with the CM using the final GMP amount. However, Princeton reserves the right to solicit competitive bids or GMP proposals from other construction companies.

All procedures for document production and review shall be followed according to the *Princeton University Facilities Department Design Standards Manual (Currently Version 7.0 dated March 2008)* that is current at the time of contract execution. It is the responsibility of the A-E to coordinate the project with the requirements of the Design Standards Manual and incorporate them into the design schedule.

Regulatory Issues.

Participation in project review procedures, including state, county, and local authorities, is included in the Architect's scope of services. This includes any meetings, presentations, graphics, corrections, and resubmissions required for such approvals.

The Andlinger Center Project will be subject to full land use review and approval by the Princeton Regional Planning Board. The Architect shall include the work associated with the land use approval process in its scope of work.

Attachments

Andlinger Center for Energy & the Environment Programming Study with Appendices

Overall Site Plan

Utility Plan

* These documents are provided for reference and are subject to change.